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LEARNING CAPACITY IN SCHIZOPHRENIA <sup>1</sup>

WITH SPECIAL REFERENCE TO THE CONCEPT OF DETERIORATION

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The study of learning in schizophrenia is of interest for many reasons. Schizophrenia is often described as a maladjustment in individuals who are unsuccessful in meeting stress. The causes may include defects in the basic personality, limitations in the capacity to adjust, faulty habit patterns, and traumatic experiences. Habit patterns, the capacity to adjust, and life experiences involve learning. The chronic schizophrenic patient is adjusting at an inferior level. This continued maladjustment could be caused, in part, by some process associated with, or secondary to, the schizophrenia. The use of the terms "process schizophrenia," "defect state," and "deterioration" may imply the existence of some biological or physiological process limiting the patient's ability to readjust himself at a higher level. For the rehabilitation and psychotherapy of schizophrenia knowledge about learning in this psychosis is of practical interest. Learning, by definition, is the process of acquiring the ability to respond adequately to a situation(20). It is a function fundamental to the processes of adjustment, maladjustment, and readjustment.

Before considering such general problems it would seem desirable to examine the characteristics of learning in schizophrenia and some of the conditions which affect it. Is there a difference in the learning ability of schizophrenic patients and normal subjects? If there is a difference can we isolate some of the related factors? We shall describe 3 experiments which explore problems raised by these questions.

Previous learning experiments by Boring (2), Hull(7), and Kent(12), using small

groups of patients and control subjects, indicated that there was an impaired learning achievement in dementia praecox. Babcock (1), applying psychometric techniques to dementia praecox patients, reported impaired learning in them. Gardner(6), Babcock(1), and Kendig and Richmond(11) found school achievement to be retarded in persons who develop schizophrenia, and they inferred an inferiority in learning ability. However, Kasanin and Rosen(9) reported higher academic achievement levels in schizophrenia than Gardner, Babcock, or Kendig and Richmond.

## MATERIALS AND METHOD

Our first experiment was on pursuit learning. The apparatus(13, 16), similar in appearance to a portable phonograph, consisted of a motor-driven hard rubber turntable 12 inches in diameter with a brass target  $\frac{1}{2}$  inch in diameter embedded flush with the surface of the turntable near the edge. For the subject there was a bent metal pointer fastened to a handle by a hinge, so that he could maintain contact but could not exert pressure on the target. With the pointer the subject pursued the target which rotated one revolution per second. If he made continuous contact with the target an electric counter recorded a score of 10 per revolution. A trial consisted of 10 revolutions; thus a score of 100 would indicate perfect pursuit. Ten trials of 10 revolutions each were given with rest periods of 20 seconds between trials. The task involved the integration of visual pursuit of the revolving target with the proper arm movement. It was a challenging task which motivated cooperative subjects highly to do their best. This form of learning was chosen for preliminary study since the complications introduced by schizophrenic think-

<sup>1</sup> Read at the 104th annual meeting of The American Psychiatric Association, Washington, D. C., May 17-20, 1948.

ing disturbances are likely to be fewer than in learning involving verbalization. It was thought that basic features of learning would be revealed more easily by such a technique.

The schizophrenic group consisted of 122 male patients who were examined once. Forty-six of these were tested 3 times. A control group of 60 male hospital employees was tested once, 22 of these twice. An interval of 3 months separated test repetitions. Thirteen moderately depressed manic-depressive patients were tested once as a partial control on the factor of psychosis. Routine clinical and laboratory examinations showed no significant physical disorder in any subject.

Statistical data on age are: schizophrenic, mean  $33.9 \pm 0.7$  years, SD 8.2, range 17-50; manic-depressive, mean  $40.7 \pm 2.9$  years, SD 10.2, range 22-52; normals, mean  $27.8 \pm 0.8$  years, SD 6.5, range 17-49. The illness in the schizophrenic group was chronic, the mean duration of psychosis (dated from first admission) being  $8.4 \pm 0.6$  years, SD 6.6, range 0.2-28.8. The manic-depressive group had a mean duration of psychosis of 3.5 years and a range of 0.1 to 13.6. The distribution of schizophrenic subtypes was: hebephrenic 29, paranoid 25, catatonic 14, simple 4, mixed 5, late indeterminate 26, unclassified 19. The subtype "late indeterminate" referred to patients who had lost most of the secondary schizophrenic symptoms and who had become "institutionalized."

### RESULTS

*Period I.*—Fig. 1 shows the results for test period I. The manic-depressive group achieves the highest scores beginning with a mean score of 37.8 on the first trial and ending with a mean of 48.9 on the tenth trial. The normal group begins with 30.3 and attains 44.3. Lowest is the schizophrenic group beginning with 16.8 and finishing with 22.7. The mean of 10 trials for the manic-depressive group is  $42.7 \pm 5.0$ , SD 17.2, for the normal  $38.2 \pm 1.7$ , SD 13.4, and for the schizophrenic  $19.7 \pm 1.2$ , SD 13.5. Trial by trial and also for the mean of 10 trials, the performances of the normal and manic-depressive groups are significantly better statistically than the schizophrenic,  $P$  in all cases being  $< .01$ . The manic-depressive

group, however, is not significantly better than the normal group. Poor achievement in the schizophrenic group is reflected in the beginning at a lower level on the first trial and improving less on successive trials.

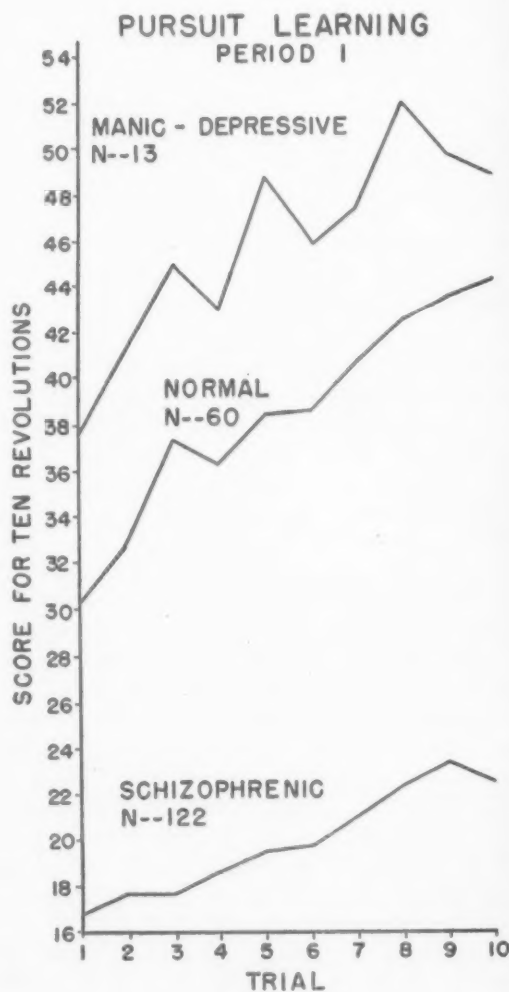


FIG. 1.

*Retest Results.*—Fig. 2 shows that both the patients and normal controls continue to improve in successive periods, but the normal group has higher achievement. Thus, in period I the patients begin at 13 and end at 19, while the controls begin at 30 and reach 43. In period II the patients rise from 24 to 31, and the controls from 41 to 60. In period III the patients attain only the level of the control group on the sixth or seventh trial of period I. The means of 10 trials in



the patients for periods I, II, and III are respectively:  $16.7 \pm 1.6$ , SD 10.8;  $27.6 \pm 2.2$ , SD 15.1;  $32.7 \pm 2.3$ , SD 15.8. The means of 10 trials in the control group for periods I and II are respectively:  $36.7 \pm 2.4$ , SD 11.2;  $49.2 \pm 2.6$ , SD 12.1. The normal subjects are significantly better in each period than the patients; in addition the normal group's period II is significantly better than the patients' period III,  $P$  in each case being  $<.01$ .

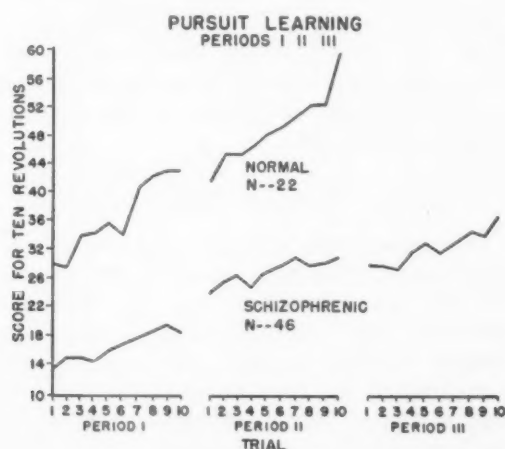


FIG. 2.

It seems clear that there is a reduction in learning achievement in the schizophrenic group. Analysis disclosed 2 factors related to their poorer performance.

**Cooperation.**—In experiments where voluntary effort is required cooperation should affect performance. To study the effect of cooperation a rating scale was devised. A grade of A was assigned to subjects manifesting active interest and maximum effort. B indicated real effort, not from primary interest in the task, but for some other reason, such as friendliness toward the experimenter. Patients graded C were docile, uninterested, perfunctory, or spasmodic in effort and required some urging. D patients considered the task disagreeable and were sometimes resentful or resistive and needed considerable urging (17, 18).

Of the normal subjects, 95% were rated A and 5% B. Of the schizophrenic patients, 15% were given a grade of A, 50% B, 30% C, 5% D. The manic-depressive patients were rated A 54%, B 38%, and C 8%.

The mean score of 10 trials for the 18 A patients is 27.8, for the 61 B patients 21.3, and for the 39 C patients 12.7. The correlation between mean score and cooperation is .44. The level in trial I and the amount of improvement are related to cooperation as Fig. 3 shows. The A patients begin with a

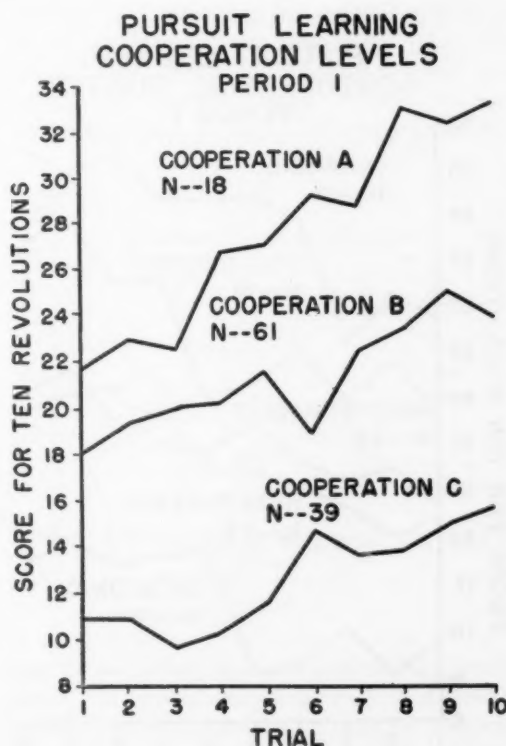


FIG. 3.

score of 22 and attain 33, an increase of 11; B patients begin with 18 and end with 24, a gain of 6; and C patients start with 11 and end with 16, an improvement of 5.

Since the cooperation levels of the A patients and the normal subjects are equivalent, it is important to compare the achievement of these 2 groups. The A patients' mean of 27.8 is significantly poorer than the normals' of 38.2,  $P$  being  $<.01$ . With the best of cooperation, then, the patients show a reduction in learning achievement.

**Schizophrenic Subtype.**—Fig. 4 plots the results by schizophrenic subtypes for period I. The order of achievement from the highest to the lowest is paranoid, unclassified, hebephrenic, indeterminate, and catatonic. The means for those subtypes are respec-

tively:  $27.6 \pm 2.5$ , SD 12.3;  $22.9 \pm 3.4$ , SD 14.4;  $18.1 \pm 2.7$ , SD 14.4;  $17.6 \pm 2.5$ , SD 12.3;  $11.1 \pm 1.6$ , SD 5.9. By statistical standards the mean of 10 trials shows the paranoid groups not significantly better than the unclassified group, but better than the other subtypes,  $P$  being  $<.01$ . The paranoid patients, the best subgroup, however, are sig-

which is near the normal mean of 38.2. Though this is a small group to use in a statistical analysis, the difference is not significant,  $P$  being  $<.40$ .

**Correlations.**—A few other relationships are of interest. In the normal group the correlation between age and mean score is .13, in the 122 patients .08. Duration of illness correlates .07 with mean score in the 122 patients. Correlations of pursuit mean score with intelligence in the patients are: with the Stanford-Binet Test .22 ( $N=62$ ), with the Otis Intermediate Self-Administering Test .21 ( $N=55$ ). In these correlations cooperation was held constant by the partial correlation method. None of the correlations is significant.

#### PROD LEARNING

The same apparatus was used in a second experiment. This time, however, the electric circuits were altered so that the turntable revolved only when the subject kept the pointer on the target. Achievement was measured by the time required for the subject to "prod," i. e., to cause rotation of the turntable for 10 revolutions. The difference between the prod and pursuit tasks is that in pursuit the speed is fixed by the apparatus, while in prod the subject determines the speed. Different features of learning are measured, as the correlation of  $-.41$  between pursuit score and prod time indicates.

The same groups of patients and normal controls were used as in the pursuit study. We shall not give detailed results. The schizophrenic group was significantly poorer in mean time score than the normal group. The influence of cooperation was clearly apparent, A patients achieving most and C patients least. But here again the A patients were significantly poorer than the normal subjects. The influence of subtype also was evident, paranoid patients being the best and catatonic patients the worst. As in pursuit the paranoid patients were significantly poorer than the normal subjects. On retest, the patients and normal subjects continued to improve, as is shown in Fig. 5. These curves have a downward trend because with increasing proficiency the time score is lower.

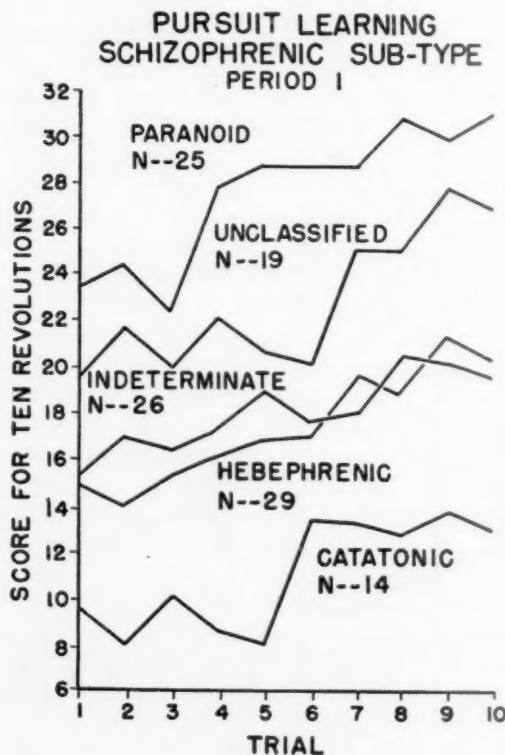


FIG. 4.

nificantly poorer than the normal subjects for the mean of 10 trials,  $P$  being  $<.01$ .

On retest the subtype differences tend to disappear. The means of 10 trials for periods I, II, and III by subtypes are respectively: catatonic ( $N=6$ ) 10.3, 23.3, 30.1; hebephrenic ( $N=13$ ) 17.3, 28.5, 26.9; paranoid ( $N=9$ ) 20.8, 29.6, 33.0; indeterminate ( $N=7$ ) 23.2, 29.6, 31.5; unclassified ( $N=6$ ) 21.0, 36.4, 45.1.

**Subtype Plus Cooperation.**—It is of interest to examine the achievement of patients graded A in cooperation within the best subtype, the paranoid. Only 6 of the 25 paranoid patients in period I gave A cooperation. The mean of these 6 for 10 trials is 32.5

## THIRTY-THREE DAY PROD EXPERIMENT

With results from both the pursuit and prod experiments showing a lower than normal learning achievement in schizophrenia the question arose: Would it be possible to raise the patient's achievement to that of the normals' by extended practice? If this were possible then we might have evidence that the capacity to learn was intact in schizophrenia. To explore this problem a third experiment was performed.<sup>2</sup> Nine schizophrenic patients were used: paranoid 2, hebephrenic 1, catatonic 2, simple

score. If then praised he would grunt, look about the room, whistle, sing, and even drop the apparatus pointer. Near the end of the experiment a pack of cigarettes was placed in front of him as a reward for better scores. His score improved markedly. With other patients cigarettes had no effect or produced negative results. An attempt to motivate one patient by comparing his scores with those of others brought the response, "high education and intelligence make a man less capable of physical work." When it was suggested that it would be remarkable for

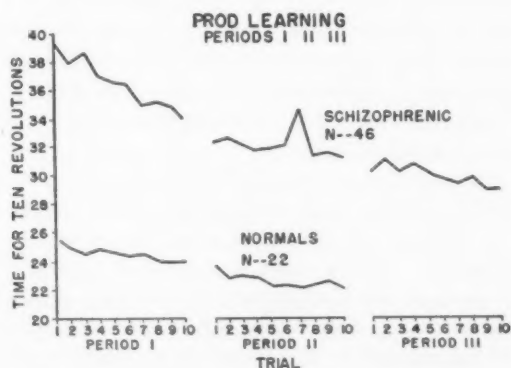


FIG. 5.

1, and indeterminate 3. The mean age was 32 years, the range from 28 through 43. The mean duration of psychosis was 7.3 years with a range of 2.4 through 15.1. These patients presented moderate to severe degrees of clinical deterioration. The composite picture was one of bizarre and ritualistic behavior, apathy, or inappropriate and silly affect, fixed delusions, and dilapidation of personal and social habits. They were making only a fair adjustment to the hospital environment.

These patients practiced the prod task every day in the week except Sunday for 33 practice days. Cooperation fluctuated considerably, but over-all ratings were: one patient A, 4 B, and 4 C. Various attempts were made during the experiment to motivate them to higher achievement. The problems encountered were numerous. One patient often began a day with an excellent

<sup>2</sup> This experiment was conducted by D. M. McGregor.

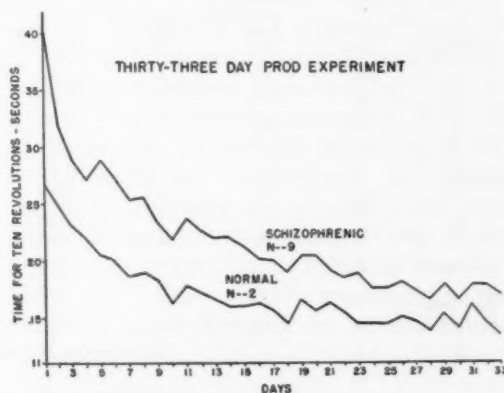


FIG. 6.

him to do better despite his handicap, he replied, "it would be possible but it would entail a vast amount of trouble and money to change my service line." This referred to a radio system by which he controlled a large national organization. But immediately he produced his best single trial. Two patients developed an interest in competing with each other. In one patient a severe scolding yielded higher scores than encouragement, praise, competition, or rewards. Two normal subjects of superior intellect and education served as control subjects. Both possessed a high degree of mechanical ability. One was 21 years old, the other 34.

Fig. 6 shows the results. The patients begin with a mean time score of 41 seconds and reach 17 on the 33d day. The normal subjects begin with a mean time of 27 seconds and by the 33d day attain 13.4. This is 3.6 seconds better than the patients. The normal subjects have reached a time score on the 33d day very close to perfection since

the minimum time is 11 seconds, the time for 10 revolutions from a stationary start. Results from individual patients show that one patient had scores as good as or better than one or both controls from the seventh day on, and 2 other patients were as good as or better than one or both controls from the 20th day on through the 33d day.

Table 1 shows the individual results ana-

TABLE 1

THIRTY-THREE DAY PROD EXPERIMENT, BEST SCORES FROM INDIVIDUALS

Patients	Cooperation	Mean score best day	Best trial score	Day best trial score reached
1	A	12	11	22
2	B	13	11	24
3	B	15	12	30
4	B	16	13	17
5	B	16	14	30
6	C	17	13	27
7	C	17	15	33
8	C	18	16	18
9	C	19	16	28
Normals				
1	A	12	11	26
2	A	13	11	24

lyzed to reveal the best performance. Here are tabulated over-all cooperation ratings, mean time score for the best day, the best trial score, and the day on which the best trial score was attained. A perfect score is 11 seconds. Both the normal subjects achieved this. Two patients also reached 11 seconds. One normal subject's mean score on his best day was 12 seconds, the other's 13. One patient's mean score on his best day was 12, another was 13. Best trial scores of 12, 13, and 14 and perhaps even higher could reflect differences in motor capacity in a task of this type. As the cooperation ratings become poorer the mean scores of the best day and the best trial scores increase. Both the patients and the normal subjects reach the best trial score on about the 25th day. These data from the individual patients and from Fig. 6 appear to indicate that the capacity to learn this task is about the same in the patients and normal subjects.

#### DISCUSSION

We shall discuss our results primarily with respect to the problem of deterioration

in schizophrenia. To deteriorate is to grow worse or to suffer impairment. As applied to schizophrenia advanced deterioration is associated with the familiar picture of a pale, apathetic, withdrawn patient, who seems to have no interest in his surroundings or concern for his personal appearance, and who spends his time in aimless inefficient work about the hospital, or who sits and mumbles incoherently. The questions raised by the concept of deterioration are: what functions are deteriorated; how rapidly and how severely have these functions deteriorated; is the deterioration arrested or progressive, reversible or irreversible; is it a habit deterioration due to disuse; is deterioration associated with brain pathology, physiologic processes, or with the psychologic dynamics of schizophrenia (3, 4, 5, 8, 10, 14, 15, 17)?

From the pursuit and first prod experiments it appears that there is a deterioration, an impairment, in learning ability in schizophrenia. Since these experiments covered 3 periods this applies only to the early phases of learning. Psychosis *per se* does not seem to be related to the impairment because the manic-depressive group attained a high level. Instead there are certain aspects of schizophrenia which are associated with the impairment. Our analysis isolated 2 of these factors: cooperation and subtype. Better cooperation yielded higher scores and the several subtypes achieved different levels.

The subtype results indicate that there are certain features of the psychosis which are of greater influence in the impaired learning ability than others. This is shown by the different achievement levels of the subtypes in the first test period and by the tendency for these differences to disappear upon retest. Ideally one would like to have large groups of A patients within a subtype to study the learning ability of a subtype. This is a difficult goal to achieve since poor cooperation is found so often in schizophrenia. The group of patients who gave A cooperation contained all the subtypes. The paranoid, the best subtype, contained all grades of cooperation. It is of interest that the 6 paranoid patients who gave A cooperation attained a score much closer to the normal than the whole paranoid group.



Clinically, the subtypes are distinguished by their psychopathological characteristics. These characteristics should be studied to discover those associated with the impaired learning ability. However, since cooperation and subtype appear to be so important in the impaired learning ability it would seem that biologic and physiologic processes, which may be associated with chronic schizophrenia, play only a secondary rôle in the impairment.

The absence of correlation of pursuit score with age or with duration of psychosis, especially the latter, suggests that there is no progressive deterioration in the impaired learning ability. Once the chronic phase of schizophrenia is established the ability to adjust to new situations does not seem to decline. Hence the deterioration seen clinically would appear to be different from the progressive decline found in the "organic" deteriorating states. In schizophrenia there does not seem to be a progressive decline in ability to adjust based upon a progressive impairment of learning ability.

Because there is a reduced learning achievement in schizophrenia in the early phases of the learning process it is suggested that rehabilitation and psychotherapy in schizophrenia would be more difficult. The reestablishment of old social and personal habits, the development of new habits and attitudes, would be slower. The barriers to reeducation would be the psychopathological features of schizophrenia.

On the other hand, from the 33-day prod experiment, the capacity to perfect a new habit seems intact in schizophrenia. The level reached by the patients was a difficult one even for the normal subjects to achieve. And this level was reached by the patients despite their poorer cooperation. Thus it would appear that the deterioration seen clinically in chronic patients is not related to a permanent, progressive, or irreversible impairment in learning capacity. The capacity for forming new habits probably is present to the same degree as in the normal person. To develop this capacity proper motivation and more time must be given to overcome the interfering factors of the earlier stages of learning.

Some etiologic theories of schizophrenia state that schizophrenia is the maladjustment

of an individual who is fundamentally inadequate. If there is no defect in learning capacity in chronic, clinically deteriorated schizophrenic patients then it is doubtful if such a defect existed prior to the onset of the psychosis. These theories must limit the inadequacy to a kind which does not include learning capacity.

We recognize that these implications go beyond the results of these experiments. Deterioration in schizophrenia involves affective responses, thought processes, volitional activities, personality structure, regression, etc. A complete discussion of deterioration should include a wide variety of personality and mental and physical functions. In our experiments we have studied only one segment of the total learning process. It would be interesting to extend learning studies to the conditioning level (19), to the verbal level, and particularly to include functions involving motivational, affective, and other dynamic components. Our report is intended primarily to assist in the formulation of more specific problems in the general area of learning or adjustment in schizophrenia.

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## OBSERVATIONS ON THE HISTOPATHOLOGY OF SCHIZOPHRENIA

### I. THE CORTEX<sup>1</sup>

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AND

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The present popularity of treating schizophrenia by physical, chemical, and surgical means (electroshock, metrazol, insulin, lobotomy, topectomy), even by those who deny an organic basis for the disease, must renew interest in the pathologic anatomy of this condition. In medicine such methods are usually employed in the treatment of organic disease. Is schizophrenia an exception to this rule?<sup>2</sup>

We are fully aware of the 2 widely divergent schools of thought regarding the histopathologic findings in schizophrenia. We recognize that some excellent investigators have concluded that dementia præcox has no organic foundation. They claim to have found the same kind of changes in the normal brain as have been described in schizophrenia. The other school of thought has portrayed changes in the brain which they feel are in keeping with the clinical picture. It is our purpose to throw some further light on this significant problem.

#### LITERATURE

Much work has been done on the histopathologic changes in schizophrenia, particularly by European investigators. The

papers can be divided into 3 main groups:

(1) Those in which the writers found no distinctive changes in the brain.

(2) Those in which the authors did find definite pathologic changes in the brain.

(3) Those in which there was a fairly typical clinical picture of dementia præcox and yet at autopsy some unusual and unrelated process was found in the brain.

*Group I.*—Among the writers who have found no distinctive changes in the brain in schizophrenia can be included the following:

Dunlap's paper (1924)(1) has made a profound impression on American investigators and on psychiatric thought. He denied that there were any changes in the brains of schizophrenics which could not be duplicated in "normal" controls.

Spielmeyer (1930)(2) believed that with the histological technique available at that time no characteristic pathologic changes could be demonstrated. He would not deny, however, that with better methods such changes might be found.

Bamford and Bean (1932)(3) found no characteristic pathologic changes in the brain in schizophrenia. They did, however, describe fibrosis of certain body organs.

Peters (1938)(4, 5) compared the brains of 8 executed criminals with 14 cases of schizophrenia. He concluded that the histopathologic findings previously reported as characteristic for dementia præcox could also be found in executed, nonpsychotic individuals.

Scheidegger (1942)(6) concluded that the pictures often described as being characteristic of schizophrenia, including the loss of cells in the cortex, are also found in the normal. He theorized that a disturbance of body metabolism is the basic mechanism in schizophrenia and that there is no primary brain disease.

<sup>1</sup> Read at the 104th annual meeting of The American Psychiatric Association, Washington, D. C., May 17-20, 1948.

From the Laboratory of Neuropathology of the University of Pennsylvania, Graduate School of Medicine; the Philadelphia Psychiatric Hospital; and the Norristown State Hospital.

<sup>2</sup> The reader may immediately object and call to mind the recent surgical attack on the compulsive-obsessive type of psychoneurosis. No one will deny that this is the most malignant of the neuroses and and it is probably on the border line between the neuroses and the psychoses. Lobotomy probably does for these cases what it does for painful conditions in the soma—in all likelihood it lessens the emotional response to painful or other undesirable stimuli.

*Group II.*—Among the writers who did find distinctive changes in the brain in schizophrenia are the following:

Josephy (1923-24) (7, 8) concluded from study of many cases that (a) pathologic changes in the brain and especially in the cortex were found routinely in all cases. (b) These changes had the appearance of a disease that was progressive, either in stages or continuously. (c) The cortical changes were not identical in all cases. He consistently found fatty degeneration and sclerosis of the ganglion cells. There was a loss of nerve cells in various cortical layers, especially in the third and fifth. The cases could be divided into 2 groups, those in which the architecture was undisturbed and those in which the cells in certain laminae were decreased in number. The latter group showed marked deterioration, while in the former there was little or no disturbance of the psyche. (d) In a few cases the basal ganglia were affected. (e) The acute exacerbations of the disease bespeak changes in the brain especially in the ganglion cells. (f) Josephy concluded that in the broadest sense schizophrenia was to be considered as a toxin-produced disease ("*toxisch bedingte Krankheit*").

Schuster (1924) (9) concluded from an intensive study of one acute case of schizophrenia that the central nervous system showed endogenous heredo-degenerative changes in the ganglion and glial cells. These changes were manifested in small focal areas.

Watanabe (1934) (10) found (a) acute and severe nerve cell disease in acute cases of schizophrenia, (b) fatty changes in nerve cells of the frontal lobes and Ammon's horn, plus moderate glial proliferation in the paranoid type, (c) focal and diffuse degeneration and loss of ganglion cells in the hebephrenic form, (d) marginal glial proliferation in very chronic cases.

Marcus (1936) (11) described focal areas of demyelination throughout the brain, especially in the basal ganglia and within the gray and white substance of the frontal and temporal lobes.

Hiresaki (1937) (12) investigated 30 cases of schizophrenia. In 2 cases of acute catatonic excitement he found universal acute cell disease (Nissl), axonal chromatolysis of

the Betz cells in 1 case, progressive changes in the astrocytes and oligodendroglia cells, and, at times, progressive changes in the microglia cells. In 3 cases of chronic catatonic excitement he observed slight architectural changes in the frontal pole and in the parietal and temporal areas; in addition there were universal acute cell disease, cell sclerosis in the second and third cortical layers, axonal chromatolysis involving the Betz and large pyramidal cells in 2 cases, destruction of the intracellular neurofibrils, and progressive glial changes. The cortical architecture was disturbed in 10 of 15 cases of catatonic stupor. The areas involved were the frontal, parietal, and temporal regions. The third layer was mainly involved and the fifth to a lesser degree. Cell sclerosis and severe cell disease were seen in 11 cases, chiefly in the second and third cortical layers; acute cell disease was present in 4 cases, axonal chromatolysis in 4 cases, loss of nerve fibers in 9 cases, and progressive glial changes in many cases. In 2 cases of hebephrenic form of schizophrenia, slight disturbance in cortical architecture was observed. Cell changes similar to those of catatonic stupor were observed. Similar alterations were present in 3 cases of paranoid schizophrenia. The chief location of the changes was in the cortical association centers. The axonal chromatolysis and acute cell disease were regarded as evidence of auto-intoxication. Cell sclerosis was seen in cases of more chronic excitement.

Wohlfahrt (1937) (13) found softened and necrotic areas in the region of the basal ganglia and Ammon's horn.

Miskolczy (1937) (14) found primarily a destruction and disappearance of the cortical neurones of the frontal, parietal, and temporal regions, lipoid infiltration of the nerve cells, and mild glial proliferation.

Elvidge and Reed (1938) (15) obtained their material at biopsy. Their conclusions were:

(a) Schizophrenia and manic-depressive psychosis were associated with demonstrable histologic changes in the brain. (b) Swelling of the oligodendroglia occurred in both psychoses; there was often an accompanying mild hypertrophy of the astrocytes. (c) Two main types of oligodendroglial changes

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were described: those in which the nuclei were normal and those in which they were pyknotic. (d) On repeating the study one or two years later in the same patients the same changes were found, denoting a long-standing process. (e) Swelling of the oligodendroglia was observed in patients with status epilepticus who were mentally confused between seizures. It was not present in the brain of a patient with status epilepticus who was mentally clear between seizures. It existed in one patient at the time of an epileptic seizure. (f) The changes in the oligodendroglia in psychotic patients occurred in the white matter. It was either general or patchy in distribution and was often more intense in the deeper layers.

Jakob and Pedace (1938) (16) found focal and general cell loss, with cell degeneration of various types, especially what they called "cytolysis." By this they meant a type of liquefaction necrosis with vacuolization of the cytoplasm. They believed that the most constant change in dementia præcox consisted of small focal cortical lacunæ, where groups of cells successively disappeared, first the small cells, later the medium sized ones, and finally the large cells. This process was interpreted as a slow "plasmocytolysis." They found these lesions mostly in the frontal but also in the temporoparietal areas.

Kirschbaum and Heilbrunn (1944) (17) studied small cortical sections from cases subjected to lobotomy. They found degenerative changes in the ganglion cells, including vacuolization, shrinkage, pyknosis, shadow cells, and infiltration with fat and falling out of cells. Fat was frequently seen in the vessel walls and perivascularly. The astrocytes were increased and hypertrophied, with occasional small glial nodules. Control cases showed none of these changes.

*Group III.*—Ferraro (1934 and 1943) (18, 19) reported 3 patients diagnosed schizophrenia. At autopsy they showed pathologic changes which accounted for the organic psychosis but which did not fit into the usual schizophrenic category. In one case, a 14-year-old boy with the clinical picture of the hebephrenic type of dementia præcox, the histologic studies revealed a diffuse subcortical demyelinating process predominantly in the frontal lobes.

In his second paper, Ferraro reported a boy of 18 whose clinical picture was typical of schizophrenia. At post mortem he found a diffuse demyelination of the subcortex in the frontal, temporal, and parietal areas, with secondary gliosis not in proportion to the intensity of the demyelination.

We (20) have reported before the American Association of Neuropathologists the case of a female physician of 34 with a symptom complex typical of schizophrenia who at autopsy was found to have Pick's disease.

#### REPORT OF CASES

*CASE 1.*—R.B., female, white, died at 22 years. Birth weight 3½ pounds. Following birth of first child at 21 years, the patient showed apathy and carelessness as to appearance. Gradual retreat from reality. Insight and judgment poor. Diagnosis, simple schizophrenia. Electroshock (20 treatments) and insulin resulted in slight improvement. Two months after release from hospital she committed suicide with illuminating gas, being dead when found by family.

At autopsy the brain showed only marked venous congestion.

*Microscopic Examination.*—The cortex showed fairly normal lamination but with scattered small foci of cell loss, mainly within the third layer of the frontal, temporal, and parietal lobes. There were also younger foci where cell degeneration had proceeded only to the point of shadow cells. There was a general proliferation of macroglia with patchy intensification. The subcortex showed degenerative changes and increase in astroglia. There was an increase in the amount of lipid within the nerve cells.

*CASE 2.*—B.B., female, white, died at 57. At onset patient became irritable, alleged food was poisoned, disrobed before windows, put hands in fire, and voiced delusions of persecution. Was disoriented, manneristic, noisy, combative, and showed loss of memory. Diagnosis—hebephrenic dementia præcox. In hospital 20 years with marked deterioration.

Autopsy showed early general peritonitis. Brain weight 1310 grams. Mild arteriofibrosis.

*Microscopic Examination.*—Marked demyelination of frontal areas and mild atrophy of temporal lobes. Moderate general and focal cell loss in the frontal and parietal lobes with numerous shadow cells, especially in the third cortical layer. Numerous areas containing shadow cells and severe degeneration of all types in the nerve cells. Loss of cell polarity constant and fat in ganglion cells increased. Glia showed moderate hyperplasia but not hypertrophy. Gliosis generalized, especially in third layer. Sommer's sector in Ammon's horn showed moderate degenerative changes in nerve cells with glial increase. Subcortex showed hy-



dropic swelling of oligoglia and numerous perivascular calcium particles and phagocytes laden with green pigment. Small arterioles mildly thickened and hyalinized. Basal ganglia showed only chronic cell change. Basal vessels revealed typical arteriofibrosis.

CASE 3.—D.T., female, white, died at 35 years. First mental symptoms at 17 years. Married and had 2 children. At 28 years became inattentive and silly, talked of sex, and seemed to be in a daze. At 33 years tried to work but could not get along with other workers. Had olfactory and auditory hallucinations. At 34 years diagnosed hebephrenic dementia præcox. Deteriorated. She was resistive and incontinent of urine and feces. Tube feeding necessary. Twelve electroshock treatments resulted in remarkable temporary improvement but subsequent regression. Sudden death one month after last shock treatment.

Body weight at autopsy 67 pounds. Brain weight 1210 grams. Convolutional atrophy, especially in parietal region. Basal vessels smaller than normal. Carotid arteries showed early atheroma. Small wedge-shaped area of coalescing hemorrhages noted in the caudal end of the right inferior temporal convolution.

*Microscopic Examination.*—Mild focal and general demyelination, mainly perivascular. Cell stains showed general (Fig. 1) and focal cell loss with many shadow cells, especially in third cortical layer. Loss of cell polarity a feature. Frontal lobes showed most marked changes. Subcortex showed perivascular collections of phagocytes around most blood vessels. Marked glial proliferation and increase of fat in the nerve cells and the perivascular regions. The hemorrhagic area was made up of petechiæ in the cortex with thrombosis of the overlying veins; this lesion was of recent origin. In this area the nerve cells showed ischemic changes with incrustation of the external Golgi net. In the basal ganglia the nerve cells showed pallor but no general or focal loss.

CASE 4.—M.S., female, white, age at death 51 years. Family history included alcoholism in father and insanity in mother. After birth of her first child at 23 acted queerly, was apprehensive, hallucinated, and developed ideas of persecution against husband's relatives. Was unable to hold a position and attacked her sister. At 27 was admitted to Norristown State Hospital with diagnosis of dementia præcox. At 36 had an EEG by Dr. M. T. Moore which revealed marked atrophy of the parietal lobes. The following year was found to have bilateral pulmonary tuberculosis from which she recovered completely. Mentally, however, became more and more deteriorated until death from bronchopneumonia.

Brain weight 1220 grams. There was cortical and subcortical atrophy and hypoplasia of vessels at base of brain.

*Microscopic Examination.*—Vessel walls showed no abnormality. Myelin sheath stains revealed atrophy of parietal and temporal areas. Cortex was narrow, especially in temporal, parietal, and frontal

areas, with general loss of nerve cells and many acellular areas. Nerve cells showed chronic changes in foci, resulting first in shrinkage, then shadow cell formation, and finally disappearance. Glia was increased throughout. Amount of fat appeared to be consistent with age of patient. In subcortex oligoglia showed hydropic degeneration and pigment-laden phagocytes within dilated perivascular spaces. Basal ganglia showed moderate degenerative changes of nerve cells without increase in glia.

CASE 5.—G.S., male, white, died at 39 years. Illness began at 24 when he showed lack of interest in work, laughed without provocation, threatened to kill his father, was hallucinated and delusional. Character changed completely. Gradually deteriorated and lost weight.

At autopsy body weight 108 pounds, and principal findings were cholelithiasis, acute and chronic cholecystitis, and multiple peritoneal abscesses. Brain weight 1550 grams; blood vessels small but normal.

*Microscopic Examination.*—Brain revealed general subcortical demyelination and cortical atrophy, mostly in temporal and frontal lobes. Cell stains showed profound changes in these areas. In frontal lobes there was general and focal cell loss in all layers. Remaining nerve cells showed loss of polarity and chronic disease, including shrunken and ghost cells. No vessel changes. Alteration in temporal lobe similar but more advanced. Some nerve cell loss in the pallidum and striatum.

CASE 6.—E.C., female, white, died at 43 years. Patient always quiet, seclusive, serious. Taught school for one year and at 22 complained of lack of concentration and loss of confidence; became seclusive and noncommunicative. When admitted to Norristown State Hospital at 38 was disheveled, disoriented for time and place, hallucinated, and chattered continually. Became progressively more disorganized. Had several episodes of congestive heart failure before succumbing.

Principal post mortem findings: rheumatic heart disease with failure, including mitral stenosis and pulmonary infarcts. Brain weight 1240 grams; presented no gross abnormalities.

*Microscopic Examination.*—Cell stains showed marked general and focal nerve cell loss. Nerve cells showed severe degenerative changes especially chronic shrinkage (Figs. 2 and 3). Some cells showed vacuolization of cytoplasm. These changes were most marked in anterior half of brain and particularly in third cortical layer. There was considerable increase in glia and fat was consistent with age. In the subcortex there was hydropic degeneration of oligoglia.

CASE 7.—N.P., male, white, died at 45 years. At 39 he was transferred to Norristown State Hospital from County Prison because of mutism, restlessness, and pathologic suspicion. He was disoriented for time and place, dirty, and noncooperative. The diagnosis was schizophrenia. He made a poor adjustment in hospital and died of bilateral pyelonephritis.



The weight of the fresh brain was 1535 grams. The blood vessels were normal.

**Microscopic Examination.**—Cortex—General cell loss with numerous focal acellular areas, especially in third and fifth cortical layers. Many nerve cells showed vacuolization of cytoplasm (Fig. 4). There were numerous shrunken, pyknotic nerve cells and shadow cells. Marginal glia prominent, rest of cortex showed moderate increase. Intracellular fat in keeping with patient's age. In striatum there was fatty degeneration of the nerve cells and increase in glia. Sommer's sector showed severe cell damage. Edema of subcortex and increase of astroglia. Perivascular accumulations of pigment-bearing phagocytic cells. Large blood vessels normal.

CASE 8.—C.B., male, white, died at 26 years. Illness began at 24, when he became listless and at times "starry-eyed." Worked occasionally, then refused to leave house. At Pennsylvania Hospital was sullen, resistive, apathetic, irritable, and blocked. Ate poorly and broke windows. Mute for 4 months. After 59 insulin and 9 metrazol treatments improved slightly. Admitted to Norristown State Hospital in catatonic semistupor and incontinent. "Loosened up" under amyltal but showed no insight. Diagnosis—catatonic schizophrenia. Fifty electroshock treatments resulted in some improvement. He disappeared from hospital and was found dead of starvation 3 weeks later.

Brain appeared essentially normal at autopsy.

**Microscopic Examination.**—There was great disturbance of architecture and severe generalized loss of nerve cells. Those remaining showed severe chronic degenerative changes. Many cells were left only with a nucleus and a halo instead of cytoplasm. Glia hyperplastic but not hypertrophic. Fat in ganglion cells and around vessels increased. In subcortex oligoglia showed swelling of cytoplasm.

CASE 9.—M.H., female, Negress, died at 45 years. Illness first noted at 26. When admitted to hospital was noisy, restless, excited, profane, and threatening to kill. After electroshock therapy developed hallucinations and delusions and had periods of catatonic excitement. Received 111 shock treatments in all.

Death resulted from hypostatic pneumonia. Autopsy revealed a recent peptic ulcer. Brain weight 1125 grams. Arteries hypoplastic without atheroma or other gross defect.

**Microscopic Examination.**—Brain revealed demyelination of the subcortex. Unusually severe diffuse loss of nerve cells. In remaining cells loss of polarity common and many had pyknotic nuclei with swollen, clear, vacuolated cytoplasm. Ghost cells numerous. Astroglia markedly increased in size and number (Fig. 5). A few glial scars were found (Fig. 6). Motor cortex showed a general cell loss, glial increase, and axonal chromatolysis of Betz cells (Fig. 7). Basal ganglia showed severe changes including cell loss, cell atrophy, and increase in astroglia. The fat in nerve cells was increased in amount and greater than age of patient would indicate.

(NOTE.—This brain was probably the most se-

verely affected in our series, and it is interesting that the patient received 111 electroshock treatments.)

CASE 10.—D.S., male, white, died at 25 years. This patient was the last of 6 children, the "ugly duckling" of a superior family. Had been a behavior problem in school from very beginning. Was discharged from Army at 19 with diagnosis of dementia praecox, simple type. Examination at hospital showed a childish, immature person without insight. Attention was limited, judgment poor and there was a suspicion of hallucinations. Stream of talk was blocked and showed lack of continuity. Was placed on electroshock therapy and 5 days after the 15th treatment had a convulsive seizure and died.

At post mortem there was extensive acute tuberculous involvement of the entire right pleural cavity. Brain weight 1500 grams. Vessels normal.

**Microscopic Examination.**—Brain showed generalized edema, generalized nerve cell loss, numerous ghost cells, and loss of polarity in many nerve cells. Occasional acellular areas (Fig. 8). Glia and fat were increased. All changes were most marked in anterior portion of brain.

## DISCUSSION

This investigation is based on a study of 10 typical cases of schizophrenia and is concentrated on the cortical findings. We can summarize our most important observations as follows:

(1) Focal cell loss. A common feature of the schizophrenic brain is the presence of numerous small areas where ganglion cells have either completely disappeared (*Verödungsherde*) or where the cells are in the process of disintegration (shadow or ghost cells). There is no associated inflammatory reaction in or around these foci, but there is a glial reaction proportionate to the severity of the nerve cell degeneration.

(2) A general decrease in the number of nerve cells, especially in the anterior half of the brain. The frontal cortex is not always most markedly affected; the temporal and parietal lobes may at times be more severely involved. The third cortical layer is the most vulnerable.

(3) Different types of cell disease have been noted. While we have seen a variety of cell changes the most constant has been the so-called chronic cell disease, including cell shrinkage and ghost cells.

(4) The amount of fat in the cells has usually been greater than one would expect from the age of the patient. This is in agree-

ment with the studies of Cotton(21) and Josephy(7, 8).

(5) The response of the macroglia, as shown by the Cajal stain, has varied in the different cases but in the main it can be stated that the astroglial increase has been diffuse and in proportion to the amount of nerve cell damage and loss.

(6) The connective tissue components of the brain have played no significant rôle in the microscopic picture.

(7) A mild general demyelination has been found in the subcortex, usually in the anterior half of the brain.

(8) The gross changes in the brain in schizophrenia are remarkable for their paucity. Convolutional atrophy at the autopsy table is not a striking feature even though the pneumo-encephalogram has shown a fairly distinct atrophy. The loss of nerve cells seen under the microscope is probably compensated for by a glial increase so that the weight of the brain and the external appearance of the gyri are not appreciably altered. It is true that pneumo-encephalography during life with all structures in situ demonstrates mild degrees of cortical atrophy more clearly than does gross examination of the brain after removal from the skull. A comparison of brain volume with skull capacity would probably give a more accurate determination.

From the above summary it can be concluded that the microscopic picture is not a startling one, a fact which cannot be too strongly emphasized. Many hope for a clear-cut, outstanding, or even a specific picture, but such expectation cannot be realized at present. However, we believe that when the above changes are found in a brain of a comparatively young psychotic individual (below 40 and in the absence of arteriosclerosis) they are extremely suggestive of schizophrenia. The cortex must be studied very carefully and comparisons made with brains of nonpsychotic controls of comparable ages and physical status.

It has been recognized for a long time that there is a definite predisposition to the development of schizophrenia in a certain type of individual. It usually attacks those who are biologically vulnerable, which in clinical language is expressed by the phrase "schizoid personality." An analogous con-

dition in physical medicine is the tendency for people with the asthenic habitus to develop pulmonary tuberculosis.

One of us (Winkelman)(22) has described a condition of the brain characterized by the presence of numerous, small, acellular areas as the result of various toxic and infectious processes (*e. g.*, rheumatic fever, eclampsia, syphilis, food poisoning, etc.). These, however, differ from the condition found in schizophrenia in that in the former we found marked involvement of the small cortical vessels, principally proliferative changes in the intima. In addition the cortical involvement was not restricted to the anterior half of the brain.

We see a picture that resembles to a remarkable degree the schizophrenic brain in cases that have been diagnosed psychosis with cerebral arteriosclerosis. In the latter, however, we find definite evidence of vascular changes plus intracellular and perivascular lipid in proportion to the age of the patient.

There are some, *e.g.*, Dunlap(1) and Peters(5), who have claimed that they have found similar changes in the brains of normal individuals. It is true that minimal changes of a somewhat similar nature may be found in the normal. It is a matter entirely of intensity of involvement, the schizophrenic showing greater cell damage and cell loss than the nonpsychotic. We might use the analogy of the number of senile plaques in senility and in the senile psychoses. A small number of plaques in the brain is found normally in the senile period without psychosis; a greater number of plaques points to a definite senile psychosis.

The problem of a "normal" brain for the purpose of control is not nearly as simple as one might think at first glance. Some workers have attempted to compare the brains in schizophrenia with those of executed criminals. Such a procedure is fraught with pitfalls since some of the criminals were undoubtedly psychopathic. Hechst(23) used as a normal control the brain of a man who had killed his wife and children. Psychiatric examination two years after the murder showed him to be apparently nonpsychotic and he was labeled as a "schizoid psychopath." On the night preceding his execution he developed a variety of delusions. In this

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patient the cortex showed the same picture as we have found in schizophrenia and it was interpreted by the author as normal. It is obvious that the diagnosis of normalcy in this patient is open to serious question.

The hunt for perfectly "normal" controls has, in our opinion, been carried to extremes. A better type of control would be nonpsychotic individuals who died from similar somatic diseases as have affected the psychotic individuals, *e.g.*, tuberculosis, heart disease, infections, and so on. It is best, of course, to compare brains of similar ages. This is what we have done in our study.

Additional evidence in favor of the organic nature of schizophrenia has been adduced by reliable investigators in related fields. Moore and collaborators (1932) (25) have shown significant changes in the pneumoencephalogram in schizophrenia. These authors demonstrated atrophy of the frontal and parietal areas in the films of typical cases of schizophrenia. One of their patients is included in our series (Case 4).

The EEG has also supplied corroborative evidence in establishing the fact that abnormal waves have been recorded from many schizophrenic patients (Davis, H., and Davis, P. A. (26), Davis, P. A. (27), Gibbs, Gibbs, and Lennox (28)). Pauline A. Davis (27) reported on a study of 132 schizophrenic patients and divided them into 3 groups on the basis of their EEG. Group 1 was essentially normal. Group 2 was labeled as the dysrhythmic type. The records in this group were indistinguishable from the tracings of convulsive cases. These patients were diagnosed catatonic schizophrenia and gave a history of stupors or periods of excitement. Group 3 was the "choppy type" which suggested the presence of some pathologic condition in the brain.

Gibbs, Gibbs, and Lennox (28) concluded that the electroencephalographic record of patients with schizophrenia is similar to those of individuals with psychomotor seizures. These tracings were also similar to those obtained in the majority of children with psychopathic personality. According to these investigators schizophrenia and certain abnormal behavior may, like epilepsy, be spoken of as a form of "cerebral dysrhythmia."

More recently biopsy studies have been done by two groups of investigators (Elvidge and Reed (15) and Kirschbaum and Heilbrunn (17)). The former have noted acute swelling of the oligoglia in the subcortex. The latter have described "degenerative changes in the ganglion cells and progressive and regressive reactions of the glia and blood vessels, such as are commonly seen in cases of chronic intoxication and metabolic disorders."

Some very recent work has indicated definite biochemical changes in the nerve cells in schizophrenia as compared to the normal. Caspersson and his associates (29) in Stockholm have revealed for the first time important chemical differences between the nerve cells in the frontal lobes of normal human beings and those suffering from various mental diseases. They showed that the polynucleotide content of the cytoplasm of the nerve cells was "very low" compared to those in the normal.

One of the recent arguments *against* the organic nature of schizophrenia has revolved around the sudden return to normal that occurs in many of these cases after intravenous amytal or pentothal. Does this transformation have its counterpart in a definitely known organic condition? Myasthenia gravis is such a disease. In this syndrome a return to near normal or normal is the rule within 20 minutes after parenteral administration of sufficient prostigmin. Does this not point to the possibility that the nerve cells are chemically, hence morphologically, altered by the disease and can be restored to normal if only temporarily by the use of appropriate drugs? This concept is in line with Caspersson's work on the chemistry of the nerve cells.

The similarity of the clinical pictures of schizophrenia with the psychoses associated with cerebral arteriosclerosis is a point which merits investigation. No one will deny that the latter has an organic foundation, although that process may be so mild as to be overlooked in a cursory examination of the cortex or from a study of small pieces of brain tissue. We have used sections large enough to give us a good idea of the cytoarchitecture of the cortex and this we believe is an absolute requirement.



## SUMMARY

1. Ten selected cases of schizophrenia from a group of 60 have been studied clinically and pathologically with special emphasis on the cortex.

2. Although the gross appearance of the brain was not at all distinctive, the microscopic picture was such as to suggest the diagnosis.

3. The main microscopic findings were: focal and general loss of nerve cells, especially in the anterior half of the brain; the presence of numerous nerve cells showing degenerative changes, such as shrinkage, vacuolization of cytoplasm, "ghost-cells," loss of polarity, and fatty infiltration. A fairly uniform hyperplasia and hypertrophy of macroglia was noted. A diffuse mild sub-cortical demyelination was present.

4. There was no involvement of the mesodermal components of the brain.

5. An increasing array of evidence in many related fields is accumulating to bolster the contention that schizophrenia should be included among the "organic" psychoses.

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FIG. 1 (Case 3).—General severe cell loss in frontal cortex, with marked nerve cell degeneration. (Tol. blue  $\times 150$ .)



FIG. 2 (Case 6).—Focal and general cell loss as well as degenerative changes in nerve cells shown. (Tol. blue  $\times 340$ .)

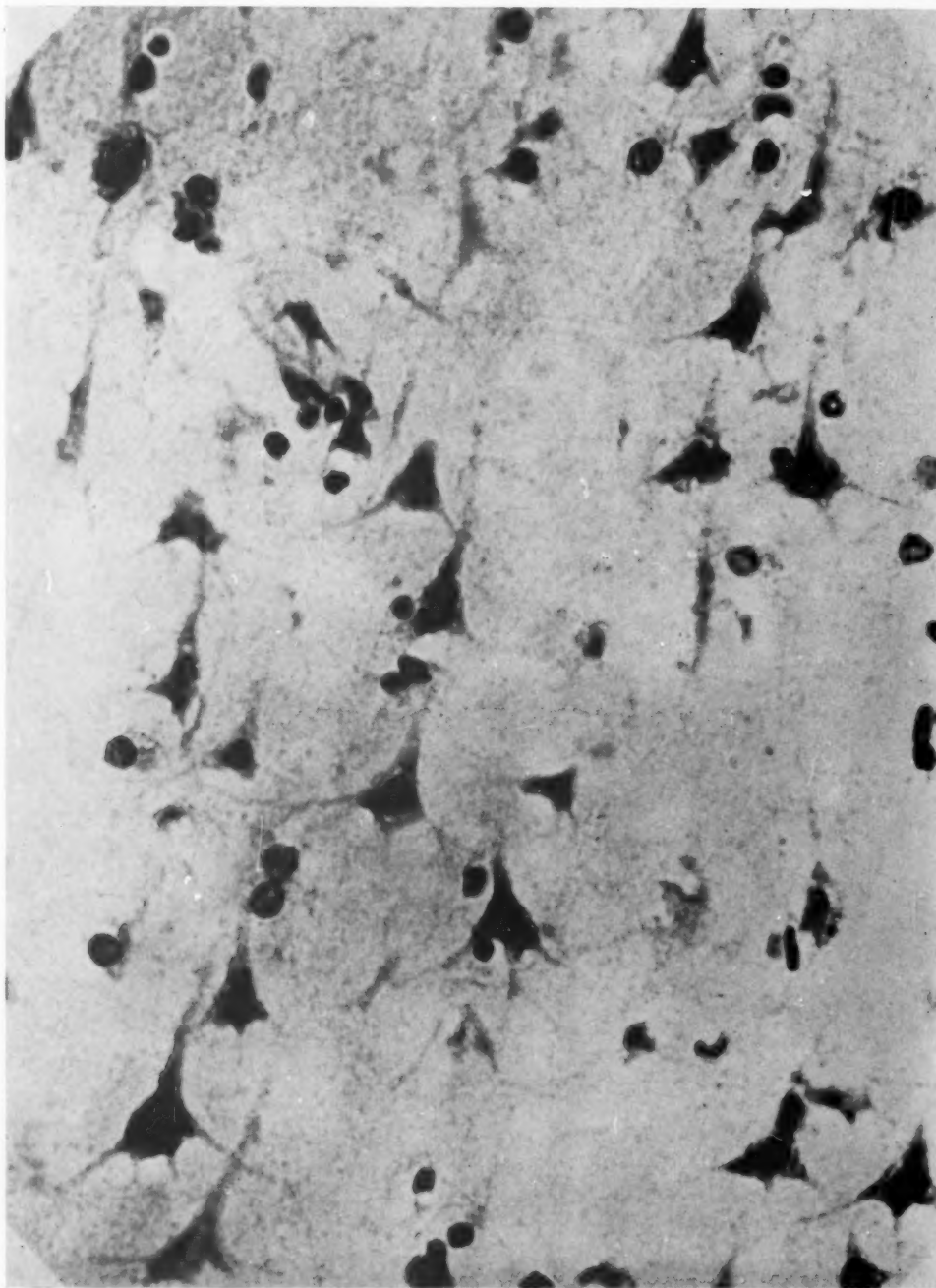


FIG. 3 (Case 6).—Nerve cell changes shown in greater detail, pyknosis, vacuolization of cytoplasm, cell shrinkage, shadow cells. (Tol. blue  $\times 700$ .)

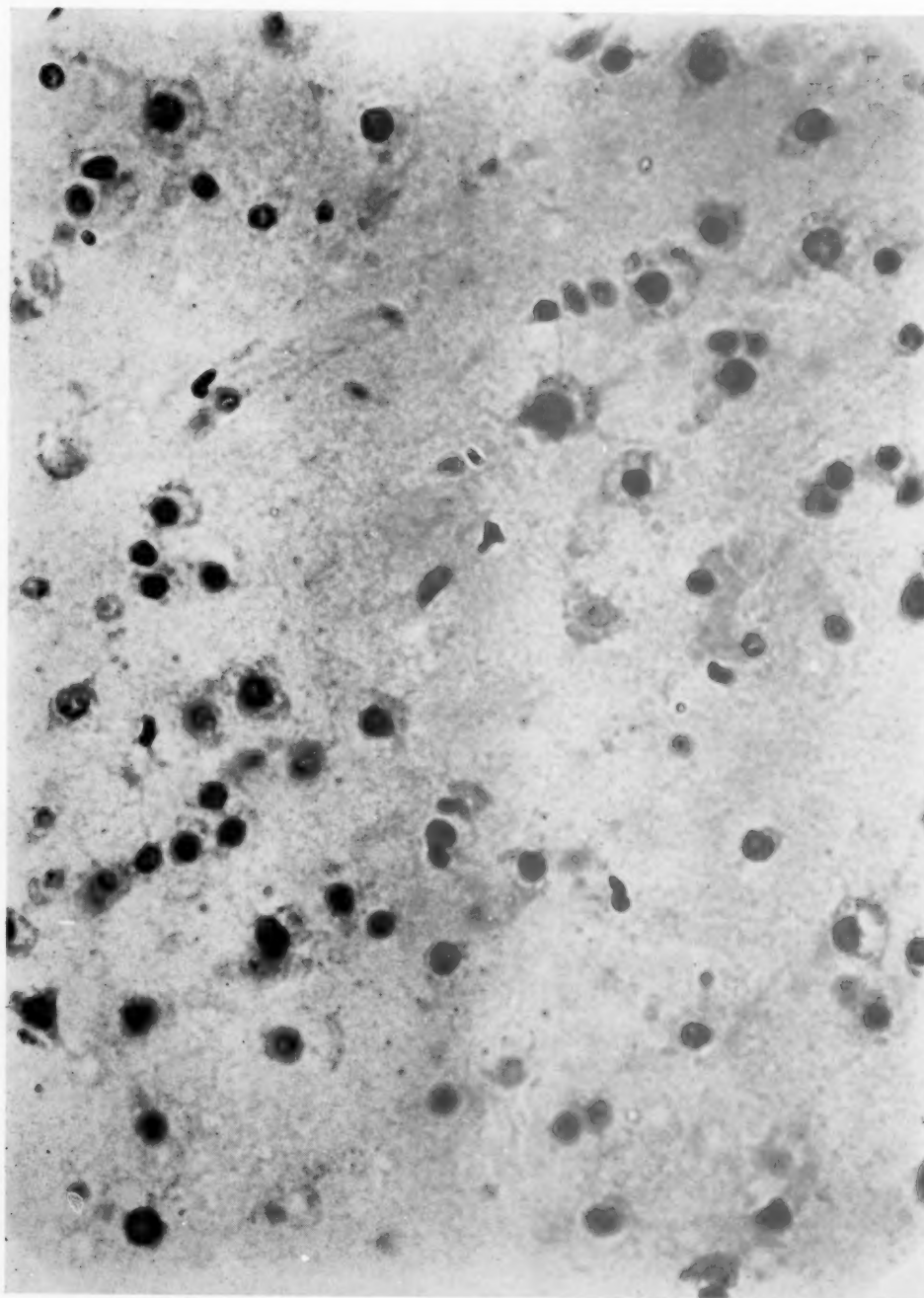


FIG. 4 (*Case 7*).—Frontal cortex showing vacuolization of cytoplasm. (Tol. blue  $\times 700$ .)



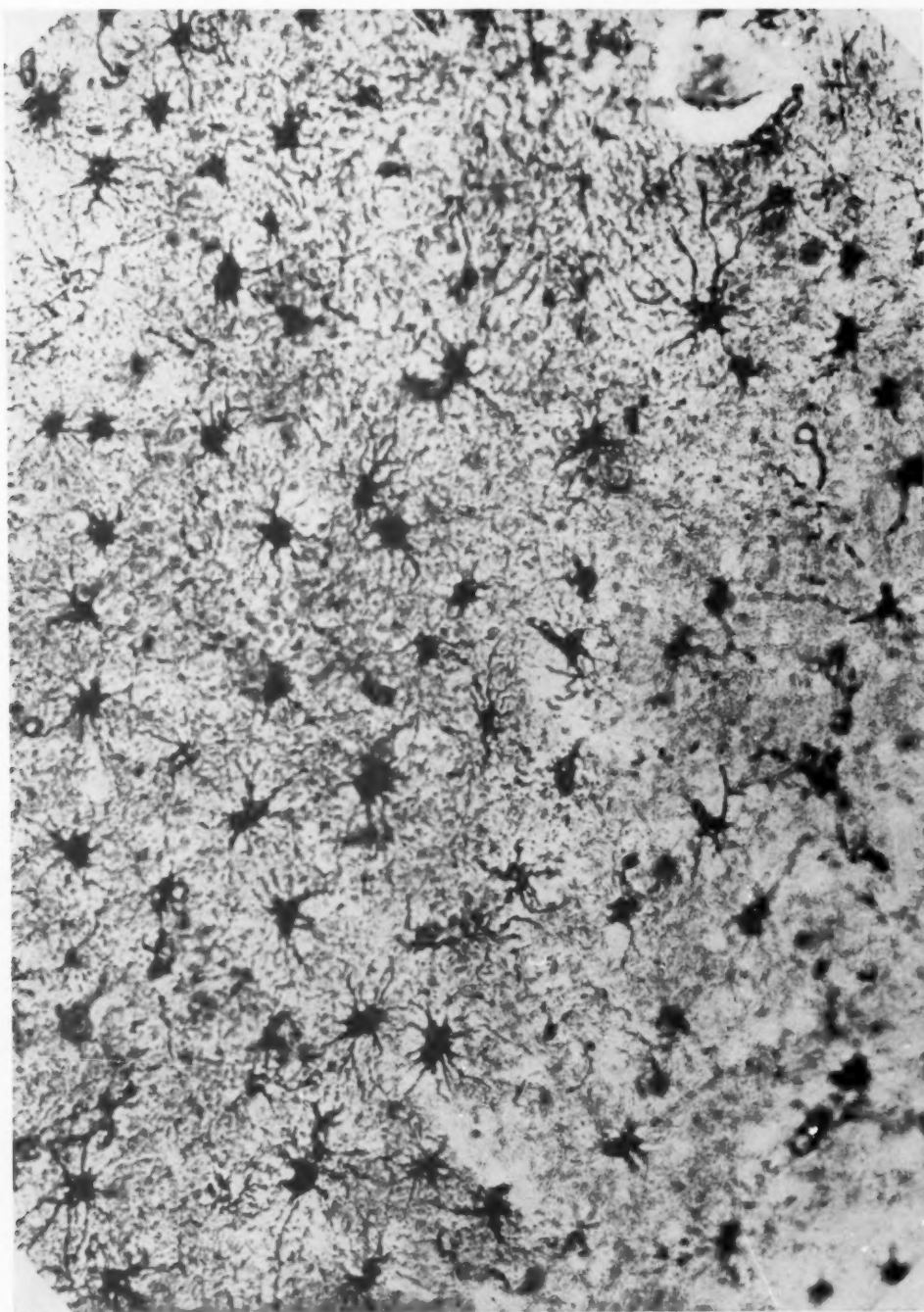


FIG. 5 (Case 9).—General glial hyperplasia and hypertrophy in frontal cortex. (Cajal stain  $\times 320$ .)



FIG. 6 (Case 9).—Glial scar in frontal cortex, with general glial hyperplasia and hypertrophy. (Cajal stain  $\times 150$ .)

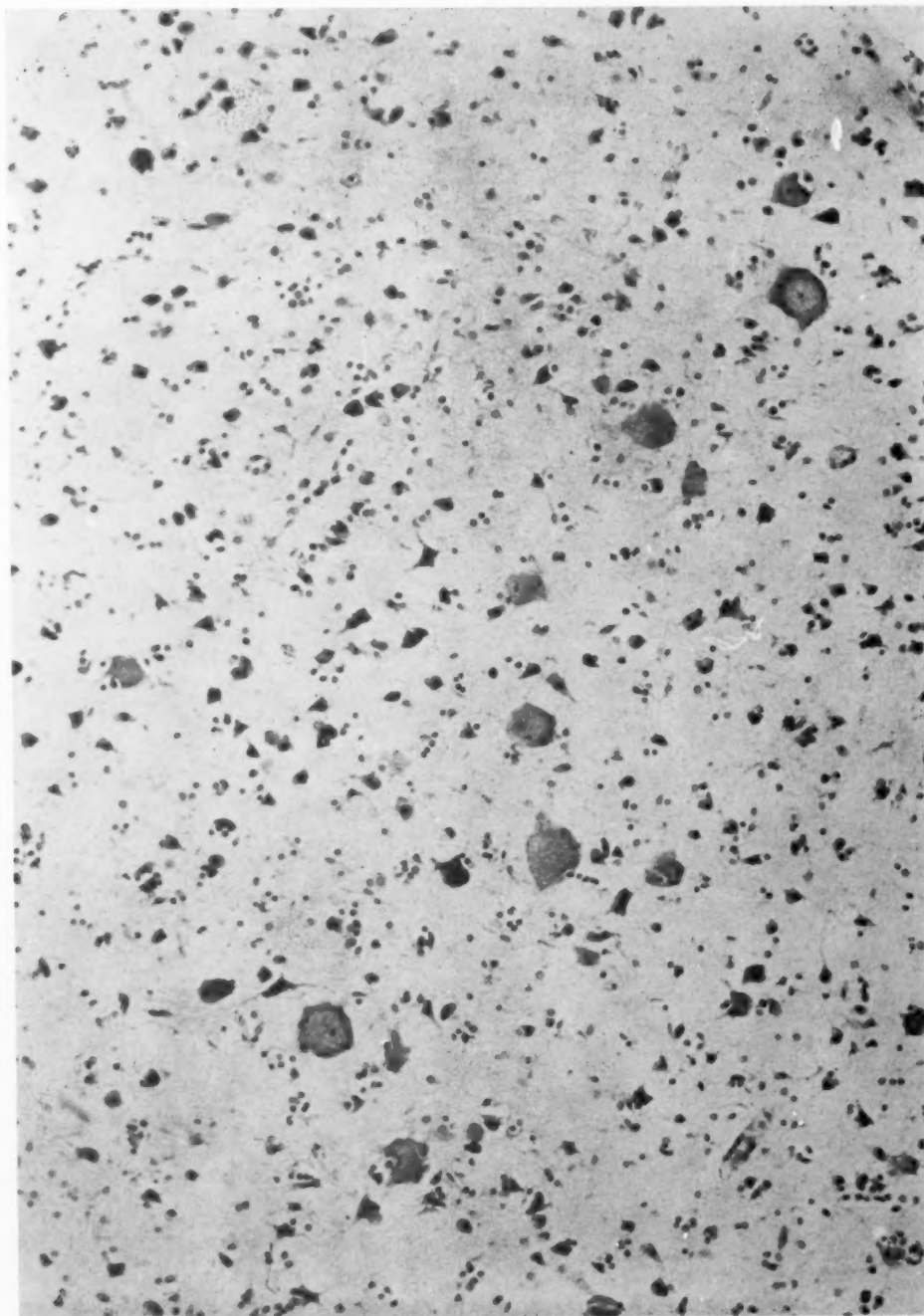


FIG. 7 (Case 9).—Motor cortex showing general nerve cell loss, severe degenerative changes in medium sized and small ganglion cells, and axonal chromatolysis in the Betz cells. (Tol. blue  $\times 160$ .)

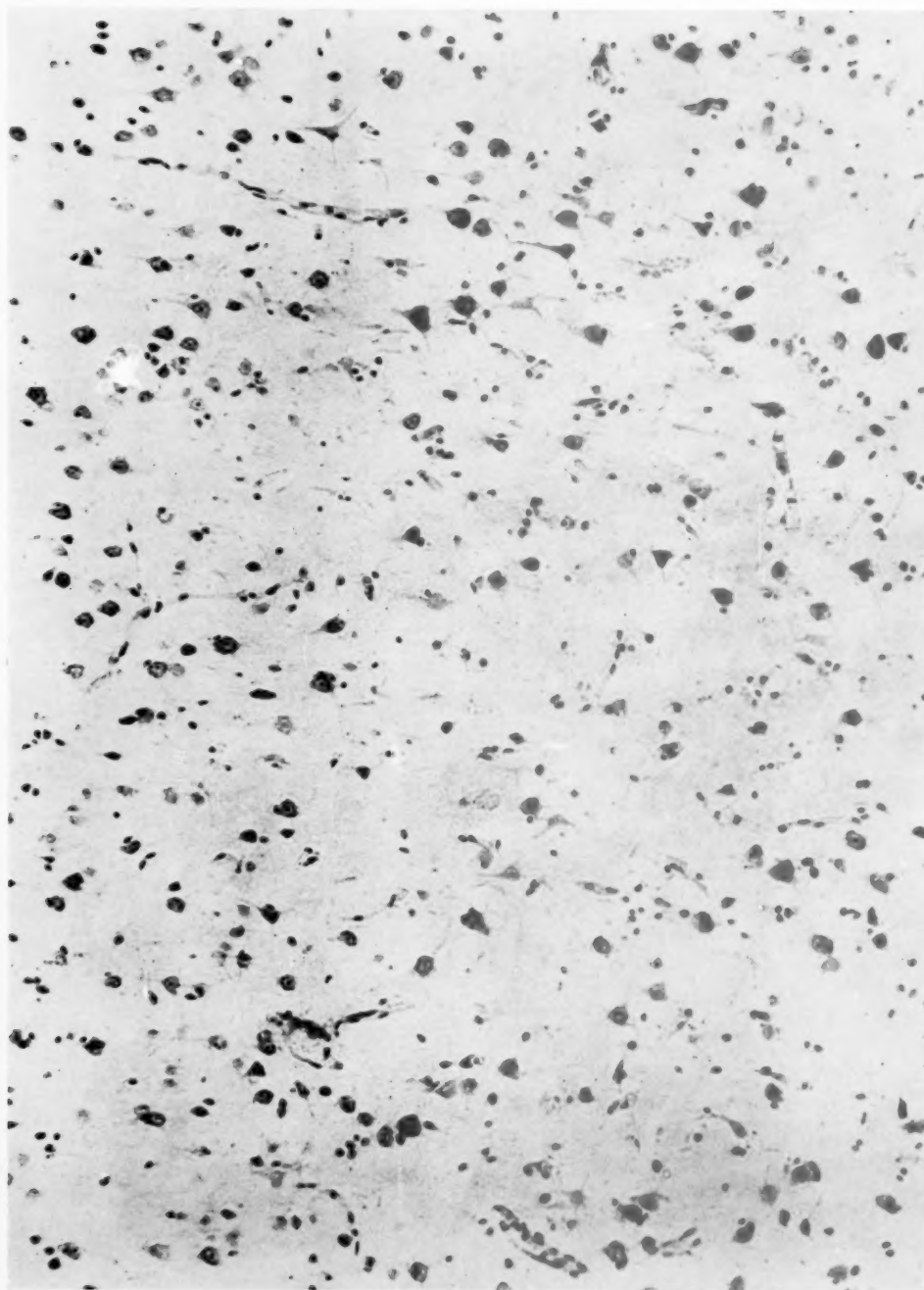


FIG. 8 (Case 10).—Frontal cortex showing general nerve cell loss. Numerous shadow cells noted. (Tol. blue  $\times 150$ .)



BRAIN TUMORS IN MENTAL HOSPITAL PATIENTS<sup>1</sup>

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Most patients with brain tumors sooner or later develop some manifestations of mental disorder(1, 3, 8, 9, 12). In many patients these manifestations appear only as defects in gross intellectual functions, characteristic for cases with brain damage. Some patients, however, develop mental symptoms which resemble those found in the so-called "functional" disorders(11, 13). These symptoms range from mild emotional disturbances simulating the psychoneuroses to severe disturbances of a psychotic nature.

There have been many reports concerning the mental symptoms which may occur as manifestations of brain tumors, but most studies refer to patients treated in general hospitals and relatively few deal with mental hospital cases. Although the majority of brain tumor patients are admitted to general hospitals, a sufficient number are admitted to psychiatric centers to constitute a not infrequent diagnostic problem for the attending psychiatrists. Brain tumor cases entering mental hospitals are more likely to feature mental disturbances which appear to be based upon emotional difficulties rather than upon lesion pathology. The differentiation of these cases from the vast number of mental hospital admissions is of immediate concern to the psychiatrist, since proper treatment usually requires prompt surgical intervention.

The following review of brain tumor cases admitted to a psychiatric center was undertaken in the hope of uncovering characteristic features in this group which might facilitate early diagnosis and treatment. The most striking finding concerned the frequency of depression as an early manifestation of brain tumor and the tendency for the depressive syndromes to be mistaken for involutional psychoses.

*Material.*—A series of 22 patients with verified brain tumors, admitted to the Boston Psychopathic Hospital during the years 1938 through 1946, formed the basis of the investigation. The case records were reviewed and analyzed from the point of view of his-

tory, clinical picture, and pathological findings. Cases in which operation for brain tumor had been performed prior to admission were excluded from the series, for in such cases admission was usually sought only for general psychiatric management, and not for diagnostic attention.

DATA

*Age and Sex.*—The ages on admission ranged from 22 to 65 years. Sixteen cases (73%) were between 40 and 60 years of age; there were only 5 cases under 40 and one case over 60 years of age. Of the 22 cases, 11 were males and 11 females.

TABLE 1  
FIRST SYMPTOMS OR SIGNS

	No. of cases
Depression .....	5
Seizures .....	5
Complaint of visual impairment.....	4
Headaches .....	2
Irritability .....	2
Drowsiness .....	2
Syncopal attacks .....	1
Memory impairment .....	1
Total .....	22

*Duration of Symptoms Prior to Admission.*—The interval between onset of symptoms and hospitalization varied from 1 week to 6 years, with an average interval of 17 months. Symptoms had been present for less than 6 months in 9 cases, between 6 months and 1 year in 4 cases, and for longer than 1 year in 9 cases.

It is worth noting that in none of the 22 cases was there any history of previous mental illness.

*First Manifestations of Brain Tumor.*—The first symptoms or signs which in retrospect gave evidence of the growth of a brain tumor are shown in Table 1.

*Symptoms Prior to Hospitalization.*—In regard to symptoms which developed during the course of the illness prior to hospitalization, those which occurred in more than one case are shown in Table 2.

<sup>1</sup> From the Department of Psychiatry of the Harvard Medical School and the Boston Psychopathic Hospital, Dr. Harry C. Solomon, Director.

It is apparent that most of these symptoms would lead one to suspect an underlying organic disorder. However, it is worth noting that depression was not an infrequent manifestation of brain tumor and that in a few cases the clinical picture simulated that of an involutional psychosis. None of the patients showed typical manic behavior al-

TABLE 2

## SYMPTOMS PRIOR TO HOSPITALIZATION

	No. of cases
Memory impairment or confusion.....	13
Depression .....	9
Seizures .....	8
Headaches .....	8
Complaint of visual impairment.....	6
Drowsiness .....	6
Irritability .....	6
Indifference .....	5
Restlessness .....	4
Complaint of generalized weakness.....	4
Loss of sense of responsibility.....	3
Syncopal attacks .....	2
Paranoid ideas .....	2
Fearfulness .....	2
Tendency to be combative.....	2
Euphoria .....	2
Aphasia .....	2
Hypochondriacal tendencies .....	2

though some of the confused patients were described as being noisy and talkative. A history of alcoholism was present in only one case and may have been symptomatic of brain tumor, since it developed 5 months prior to entry.

Of the 10 cases with a history of seizures, 3 had Jacksonian attacks, 2 had generalized seizures with one side predominating, and 5 had generalized seizures without unilateral predominance. The duration of seizures varied from 1 week to 6 years. Only 4 cases had attacks for more than 1 year prior to entry.

*Chief Features of Mental Status on Admission.*—By the time the patients were hospitalized, most of them showed prominently features characteristic for cases with organic brain disease; some resembled the toxic psychoses. In 15 cases there was definite impairment of sensorial functions in the nature of confusion, disorientation, or memory impairment. There were only 6 cases in which depression was a prominent feature following admission. In a few cases drowsiness was present. It appears that, with the further growth of the tumors, the symptoms became

more and more typical of cases with severe organic brain disease, and the complaints which had simulated those seen in nonorganic disorders tended to pass into the background.

*Neurological Findings.*—On admission to the hospital, the neurological examination was negative in only 3 cases, all of which had frontal lobe tumors. In a fourth case, one with an olfactory groove meningioma, the only positive neurological finding was bilateral anosmia. Papilloedema was recorded in 10 patients and secondary optic atrophy in 1. Primary optic atrophy was observed in 3 cases, 2 of which had craniopharyngiomas and 1 an olfactory groove meningioma.

*Cerebrospinal Fluid Findings Prior to Operation.*—In 13 cases having preoperative cerebrospinal fluid examinations, only 4 had normal findings. Nine cases had an elevated total protein (up to 400 mg. %); 2 had xanthochromia, and 3 had a slight elevation of the cell count.

*Electroencephalographic Findings.*<sup>2</sup>—Of 10 cases studied by electroencephalography preoperatively, 9 showed some focal abnormalities. In 6 there was a single focus, which was correct as to the side of the lesion in all and correct as to the approximate site of the tumor in 4. In 2 cases there were 2 asymmetrical foci one of which localized the tumor accurately in each case. There was only one case with bilateral symmetrical foci; this was a case of olfactory groove meningioma with electroencephalographic localization in both frontal areas. Four of the 10 cases had seizures; in 2 of these the electroencephalographic abnormalities were paroxysmal, in addition to being focal and correct as to the approximate site of the tumor.

*Type and Location of Tumors.*—In 20 cases the tumor was verified at operation and in 2 cases at postmortem examination. Thirteen patients had glial tumors, 7 of which were rapidly growing (spongioblastomas), and 6 slow growing (gliomas). There were 3 cases with meningiomas (2 olfactory groove meningiomas and one petrous ridge meningioma), 3 with metastatic tumors, 2 with craniopharyngiomas, and 1 with a pinealoma. It is worth noting that there were no pituitary or posterior fossa tumors in the series.

<sup>2</sup> Electroencephalograms were interpreted by Dr. Milton Greenblatt and Dr. Knox Finley.

In regard to the location of the glial tumors, 8 were primarily frontal, 3 temporal, and 2 parietal.

#### DISCUSSION

In reviewing this group of cases it became clear that the great majority of our patients with brain tumors reached the hospital at a late stage in their illness. On admission, most of the cases showed prominent mental features characteristic of organic brain disease in addition to positive neurological findings.

In only one case was there significant delay in making the diagnosis of brain tumor following admission. This delay occurred in a patient with an olfactory groove meningioma who had a depression which simulated that of an involutional psychosis. A psychometric examination with the use of abstraction tests(16) was of considerable value in this case because the findings, which were indicative of organic brain disease, suggested further studies which ultimately led to the correct diagnosis. This is the type of case to which Bruetsch(7) referred when he stated, "The meningioma arising from the olfactory groove and involving the frontal lobes is the most important tumor in psychiatry; important because the tumor causes only mental symptoms, goes unrecognized, and is capable of producing any mental reaction type." He also adds, "From experience with these tumors, both clinically and anatomically, I have become convinced that in every large state hospital there are two or three patients who walk around in apparently good physical health, but who have fairly large meningiomas, sometimes the size of a small fist, in the frontal lobe region, and which will only be diagnosed at postmortem." McIntyre and McIntyre(10) have also stressed the importance of the olfactory groove meningiomas, especially in view of the fact that these tumors are benign and operable.

In several of our patients depression was a rather prominent feature not only in the history but also in the mental status at the time of admission. Since the ages of most of these patients ranged from 40 to 60 years, an incorrect diagnosis of involutional psychosis was apt to be made prior to admission, with resulting delay in hospitalization. Pessin

(11) reported such a case in which the picture of involutional psychosis was sufficiently typical that shock therapy was given before a correct diagnosis of brain tumor was made.

The absence of typical manic behavior in our series of cases is noteworthy, especially in view of the fact that Akelaitis(6) stressed the occurrence of manic forms of behavior in brain tumor cases which resembled the functional psychoses.

From a study of the mental status on admission it was observed that several of our cases also resembled the toxic psychoses. The frequent similarity between brain tumor cases and toxic psychoses has been emphasized by Anderson(9).

The high incidence of seizures in our cases stresses the need for repeated warnings that one should suspect brain tumor in patients developing seizures after the age of 30 years.

Another feature of interest was the frequency of visual loss as a manifestation of brain tumor. In these cases visual loss was explainable on the basis of either primary or secondary optic atrophy.

It is worth noting that electroencephalography showed a high percentage of focal tracings with good localization in many cases. These findings add to one's feeling of confidence in the value of electroencephalographic localization studies for cases with suspected brain tumors.

In our series there was a high incidence of gliogenous tumors (59%) and a relative paucity of meningiomas (14%). These findings contrast with those of Larson(5), who found 13.3% gliogenous tumors and 26.6% meningiomas in a series of 30 brain tumors found at routine autopsies in a large state hospital. Our findings resemble more closely those of Davidoff and Ferraro(2), who found 48% gliomas and 30.6% meningiomas in a series of 75 cases studied at the New York State Psychiatric Institute. In comparing our cases with those seen in large state hospitals it is important to note that at the Boston Psychopathic Hospital, where our cases were studied, one finds mainly patients under the age of 60 years and primarily those with relatively acute mental disorders, whereas in large state hospitals many older and more chronic cases are also seen. Furthermore, all our patients were initially

hospitalized for mental disorders directly related to the growth of brain tumors, whereas many of the cases studied at large state institutions were initially hospitalized because of a so-called functional disorder, and only at a later date, sometimes after many years, developed a complicating brain tumor. These considerations are also important in understanding the age discrepancy between our cases and those studied at other state hospitals (14, 15) where the majority of patients with brain tumors were found to be over 60 years of age.

The absence of posterior fossa tumors in our series is consistent with the observation of Keschner, Straus, and Bender (4) that mental symptoms are relatively infrequent in patients with infratentorial tumors as compared to cases with supratentorial neoplasms.

#### SUMMARY

In a review of 22 cases with brain tumors verified at operation or post-mortem examination at the Boston Psychopathic Hospital during the years 1938-1946, the following observations were made:

1. Glial tumors comprised the majority of cases although there were also meningiomas, craniopharyngiomas, pinealoma, and metastatic tumors. There were no pituitary or posterior fossa neoplasms in the series.
2. In the majority of patients, symptoms which in retrospect gave evidence of the growth of a brain tumor had been present for a period of 6 months or longer prior to admission.
3. In none of the 22 cases was there any history of previous mental illness.
4. The most prominent early manifestations of brain tumor in this series consisted of seizures, depression, and visual impairment.
5. At the time of admission to the hospital most patients showed prominent mental features characteristic of organic brain disease, and some showed clinical pictures resembling those seen in the toxic psychoses. The chief features of the mental status at the time of admission were confusion, memory impairment, and depression. In some cases, due to the prominence of depression, the clinical picture was similar to that often seen in the involutional psychoses.

6. Neurological abnormalities were present in all but 3 cases in which the tumors were confined to the region of the frontal lobes. In one case of olfactory groove meningioma the only positive neurological finding was anosmia.

7. Electroencephalography was of considerable value in preoperative diagnosis and localization of the tumors.

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## SPANISH PSYCHIATRY DURING THE LAST DECADE<sup>1</sup>

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Psychiatry in Spain had reached the highest point of its history in 1936. This was due mainly to the valuable contributions of the school of Cajal. Mention should be made in the first place of the work of Del Rio-Hortega on the histopathology of neuroglia and microglia as well as the work of his numerous pupils and also the experimental work of Lafora and co-workers on brain lesions and the publications by Tello, Castro and others on the fine anatomy and the physiology of the nervous system. Mira, Germain and others had done important work in experimental psychology, whereas Angel Garma was the leading figure in the psychoanalytic field. Numerous contributions to clinical psychiatry were published in *Archivos de Neurobiología* by Sanchíz-Banús, Mira, Sacristán, Prados, Alberca, Gotor, Llopis, Aldama, Valenciano, López-Albo and others who are responsible for incorporating Spanish psychiatry into the international scientific movement. To this period, previous to the Civil War, belong a series of important books. Two of them were by Professor E. Mira, of Barcelona: "Legal Psychology" (1932) and "Textbook of Psychiatry" (1935); of the latter, two other editions have since been published in Argentina. Mention should be made of Sacristán's "Differential Diagnosis between Schizophrenia and Manic-Depressive Psychosis"; "Clinical Psychiatry" by Vallejo Nájera; "The Mentally Abnormal Child" by Lafora; "Psychoanalysis and Behaviour" by Angel Garma; Prados' "Psychobiology of Juvenile Delinquency" and a critical survey by López-Ibor "Past and Present of Psychoanalysis."

On the other hand the so-called "Psychiatric Board" organized by the Division of Mental Hygiene of the Department of Public Health had succeeded between 1931-35 in bringing considerable advance into the field of mental hygiene with (a) the new regulations concerning the handling of men-

tal patients; (b) the building of new state mental hospitals and the setting up of psychiatric clinics; (c) the improvement of the old mental hospitals by means of a constant supervision by members of the Board, and (d) the training of psychiatric nurses of both sexes, intended to improve the standard of treatment for both indoor and outdoor patients. All these reforms and others under way were interrupted during the Civil War (1936-39). As a result, the new mental hospital in Alcala de Henares, near Madrid, was used as a barracks and several mental hygiene clinics disappeared. Something similar happened to several newly created university psychiatric departments of which only one functions today under the professorship of Dr. Vallejo-Nájera.

At the end of the war, scientific activities started anew but the beginning of the second World War limited the psychiatric information obtainable in Spain to German publications. At the end of 1940 a new psychiatric journal appeared: *Actas Españolas de Neurología y Psiquiatría* in Madrid, edited by López-Ibor. Articles by the youngest psychiatrists and by the older ones who did not go into exile were published. If it is true that the number of articles published at this time has diminished considerably as compared with the period previous to the Civil War, it is true also that more books dealing with neurological or psychiatric problems are now coming out. In the year 1946, there appeared in Madrid the publication of a psychological Journal edited by José Germain: *Revista de Psicología General y Aplicada* with collaboration from both Spain and abroad.

In 1942 a meeting of neurologists and psychiatrists took place in Barcelona. Dr. López-Ibor in his presidential address pointed out the reforms carried out in the psychiatric field previous to the Civil War and suggested others that had actually been already discussed and approved at that time. As one could expect at this meeting, most of the

<sup>1</sup> English translation was kindly furnished by Dr. Miguel Prados of McGill University, Montreal.

papers dealt with problems of military psychiatry and with the postwar period. Among these, neurological and psychiatric problems due to nutritional deficiencies (pellagra, lathyrism, etc.) were the most interesting. In addition, there was a series of papers reporting personal experiences with shock-therapy techniques (insulin, cardiazol, histamine and E.C.T.). The experience of Spanish psychiatrists followed along the same lines as those of other countries. There were also some contributions to the problem of encephalitis and encephalomyelitis of various etiologies, mainly typhus and brucellosis as well as others on psychotherapy.

Since this meeting in 1942, no other meeting has been held in the intervening six years. The annual educational campaigns organized by the League of Mental Hygiene which proved so popular in the pre-war years also have been abandoned. These campaigns, though intended mainly for public education, interested the local and central governments, who, as a rule, were not too concerned about questions of mental hygiene. The publication of *Actas Españolas de Neurología y Psiquiatría* terminated in 1944 only to begin again two years later. This time, however, about one-half of the papers were by Portuguese neurologists and psychiatrists. One gains the impression from this—the only specialized publication—that the Spanish psychiatric production is diminishing considerably. The most obvious fact is the decline of the neurohistological and neuropathological tradition of the Cajal school.

In order to make this survey more complete we must mention something about the books published since the end of the Civil War. Three of them are important because of the research material. "The New Cerebral Dynamics" (1945) by Justo Gonzalo is a deep study of the physiopathology of perceptions in cases of brain injuries; new dynamic laws are described and interpreted. "The Rorschach's Psychodiagnostic" (1944) by José Salas was written in 1936 and was based on the study of 695 normal individuals and 1,148 pathological cases, many of whom were carefully investigated from a clinical and psychoanalytical point of view. "The Pellagra Psychosis" by Bartolomé Llopis is a descriptive study of psychiatric sys-

tematization (structural analysis). In a new form the author deals with the old idea of the unity of the psychosis with different clinical pictures according to the changes in the content and the level of consciousness (axile syndrome common to all psychoses).

Let us mention other types of books which deal either with an actual concrete problem from an educational point of view or are more similar to textbooks. Dr. López-Ibor has published the following books: "War Neuroses" (1942), "Psychiatric Therapy" (1942-44) and "Diagnosis and Treatment of the Essential Epilepsy" (1943). The first of these is an excellent monograph in which the author deals, with a critical mind and psychological skill, with the psychopathological problems of war. With regard to the subject of epilepsy, three other books deserve to be mentioned. One by Dr. Pablo Gotor, "Epilepsy," (1942) is a very comprehensive work dealing with all the different aspects of this problem. Another by Drs. R. G. Pinto and V. San Sebastián, "The Present Medical and Surgical Treatments of the Epilepsies," (1945) is mostly of a clinical and personal nature. The work of Dr. S. Obrador-Alcalde, "Physiopathology of the Epileptic Seizure," (1947) is exclusively devoted to the study of the different factors which intervene in the epileptic seizure from a metabolic and electroencephalographic point of view.

In connection with the modern treatments in mental diseases, L. Valenciano published a monograph in 1942 under the title "Modern Therapeutic Tendencies in Psychiatry." Among the most important publications mention should be made of the book by Professor Guija Morales—"Malaria and Atebrinic Psychoses" (1941); "Psychosis Mitis" (1946) by Dr. M. Merenciano, dealing with the mild or early psychoses as seen frequently by the general practitioner. The same author has also published "Psychopathology of Adolescence" (1947). Dr. R. Rey's thesis, "The Autonomic Nervous System in Schizophrenics," (1944) should also be noted.

J. Escalas-Real's book "Psychiatric Care in the Balearic Islands" (1947) deals with general points of institutional treatment. Two books on the history of the psychiatric movement: Lain-Entralgo's "Studies in the

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History of Medicine and Medical Anthropology" (1943) and Perazade-Ayala "Spanish Psychiatry of the XIX Century" (1947) show the decline of the interest in psychiatry among the medical profession in Spain and its rebirth at the beginning of the XX Century.

Dr. Vallejo-Nájera, professor of psychiatry at the University of Madrid, is the author of the following books: "War Psychoses" (1942); "Textbook of Psychiatry" (1945), the second edition of which, considerably improved, appeared in 1948; and the one written in collaboration with Dr. Escudero on "Psychic Changes and Cranial Trauma," published in 1947. Dr. Llaveró published a monograph in German on "The Thromboangitis Obliterans of the Brain" (B. Schwabe, Basel 1948). This is a very thorough clinical and pathological study of the problem. Dr. Obrador published a monograph on psychosurgery: "Modern Surgical Treatments in Psychiatry" (1947) based on his personal neurosurgical experience with prefrontal lobotomy. Marco Merenciano's work "Psychiatry and Surgery" (1948) is mostly of a theoretical and polemic nature. A very good book on the "Surgery of Pain"

(1941) by Dr. E. Tolosa should be mentioned among others published by him on neurosurgery. An important contribution to neurology was made by R. Alberca with his book "Ectotropic Neuroaxitis" (1943), a very comprehensive study of the parasitic virus infections of the central nervous system. A. Subirana published a "Pathology of the Autonomic Nervous System" in 1945 and Gimeno-Riera and Rey Ardid a "Neurology" in 1942 for the use of students.

In summary we may say that Spanish scientific psychiatry during the last decade is dominated by an enthusiastic interest in the practical therapeutic problems and shows an obvious lack of attention to experimental and laboratory research problems of an etiological and neuropathological nature. One must remember the need to reactivate the old Spanish neurobiological tradition of the Cajal school. There is an equal lack of psychological and psychotechnical research of the type which we used to see at the psychological and vocational guidance laboratories once conducted by Dr. J. Germain in Madrid and Dr. E. Mira in Barcelona. Let us hope that soon we will see a renewed interest in more research activities.

## AN INDUSTRIAL PSYCHIATRIC PROGRAM IN A GOVERNMENT SETTING<sup>1</sup>

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*Washington, D. C.*

Industrial psychiatry is one of the more recent developments within the field of psychiatry. Considerable literature has been accumulating on this subject, especially in the past 10 years, but it has been almost entirely concerned with private industry. The purpose of this paper is to emphasize further the role of psychiatry in industry, to present information on the integration of psychiatry in a government health program at the Veterans Administration Central Office, in Washington, D. C., and to discuss the psychiatric aspects of this program.

As early as 1916, Dr. C. C. Burlingame emphasized the fact that "the psychoneuroses and emotional attitudes of the employees toward their employment, their foreman and fellow workers and the machines, were responsible for greater loss in dollars and cents than accidents and contagion" (1). In 1920, Dr. E. E. Southard, then director of the Boston Psychopathic Hospital, working with a clinical team of psychiatrist, social worker, and psychologist, found that "sixty-two per cent of more than four thousand cases reached the discharged status through traits of social incompetence rather than occupational incompetence" (2).

In 1922, the Metropolitan Life Insurance Company added a psychiatrist to its medical department to aid in selecting employees and make recommendations relative to promotions, in addition to performing clinical psychiatric duties amongst the employees.

From 1925 to 1929, Dr. V. V. Anderson conducted a psychiatric study of 1,200 employees at a large New York department store and concluded that approximately 20% of all employees of organizations are "problem" cases. It was Dr. Anderson's belief

that the common causes of work failure are maladjusted personality, specialized job disabilities, and faulty physical conditions (3). Through the techniques of personnel and job surveys of entire departments, this mental hygiene clinic was able to institute a program with the underlying concept that effective production depended on a healthy mental attitude and a better adaptation to life on the part of the employee.

The Hawthorne experiments, conducted at the Western Electric Company from 1929 to 1933, began as technological tests of working conditions (4). The tests showed that work has meaning in terms of satisfactory human relations and that dissatisfaction with work interfered with socialized living. As a result of these experiments, the Western Electric Company established in 1938 one of the best-known counseling programs in the country.

During the depression years of the 'thirties, industry did not lack for man power. An unsatisfactory employee was easily replaced. During World War II, however, man power became scarce, and it became necessary to employ the services of every available individual willing to work and to utilize those services to the best advantage. The need for psychiatrically and psychologically oriented workers in the personnel offices became evident, and psychiatrists were employed in advisory capacities. Brody stated that the purpose of industrial psychiatry was to devise means of separating the large numbers of employables from the small number of unemployables and to improve methods of job placement and handling of the emotionally handicapped (5).

As early as 1924 the Federal Government showed an interest in the health of its employees. The U. S. Civil Service Commission was the agency mainly concerned, but its functions were directed to physical examinations and fitness for duty in connection with appointment, promotion, and retire-

<sup>1</sup> Read at the 104th annual meeting of The American Psychiatric Association, Washington, D. C., May 17-20, 1948. Published with permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, who assumes no responsibility for the opinions expressed or conclusions drawn by the authors.



ment, rather than to problems of maladjustment among the employees.

In the District of Columbia area, the Veterans Administration Hospital, Washington, D. C., was given the responsibility for health problems or fitness for duty examinations for employees of all Federal agencies. During the years 1933 to 1942, one of the authors (L. H.) participated in this program in the capacity of psychiatric social worker, working in a team with a psychiatrist and an internist. Physical and psychiatric examinations were performed, and a formal report with recommendations was submitted to the requesting Federal agency. The social worker also followed up the cases. This service rendered by the Veterans Administration to the Federal agencies in Washington was the basis for a more comprehensive health program which was set up in 1942 by the Veterans Administration in its Central Office personnel office for its own employees.

The Veterans Administration was relieved of its duties of serving all Federal agencies in 1943 when the U. S. Public Health Service established a mental hygiene unit attached to the Employees Health Service(6). By this time, Federal agencies in Washington were aware of numerous health and mental problems among their rapidly increasing numbers of wartime employees which could not be managed effectively by their personnel officers or by the limited staffs of the emergency health rooms maintained by the majority of agencies. Most agencies could not establish their own mental health programs because they did not employ a sufficient number of personnel or could not obtain trained professional workers. The Public Health Service mental hygiene unit was therefore readily accepted by the agencies.

In April 1942, the Veterans Administration Central Office established an employee counseling program which acted as a liaison between the office of personnel and the existing health unit. The function of the counseling unit was to deal with any situation presented by an employee or his supervisor which affects or is likely to affect his work productivity(7).

The counselor quickly enlisted the active cooperation of the other units in the office of personnel. Meetings and conferences of

supervisory employees were held to acquaint supervisors with the counseling program and to inform them concerning mental health and its effect upon job adjustment. Series of such conferences have been held from time to time during the past 5 years. It is interesting to note that those supervisors who best know the functions of the counseling unit refer the greatest number of employees to it and often are able to do so in time to prevent the development of a more serious problem. The supervisors welcome the services of the unit, for it offers them definite help in handling problem employees and supports their recommendations for personnel actions. The availability of this unit and the ease of referral is a pertinent factor in its success.

The health aspects of the counseling program were carried out in close collaboration with the existing health unit or dispensary, which was staffed by a general practitioner and a corps of nurses. Psychiatrists assigned to the Veterans Administration Central Office were available for consultation.

The medical consultant sees all employees who have any physical or mental health problem, and all such cases coming to the attention of the employee relations unit are referred to him. The nurses assist the physician in his duties and are especially oriented to the aspects of preventive medicine.

The psychiatric consultant acts in an advisory capacity on an informal basis and his function is to examine all employees referred to him by or through the health unit physician. Employees are examined who show evidence of mental disturbance; social maladjustment; difficulties in job placement or adjustment; and excessive absenteeism or tardiness. Evaluation is also made of prospective employees who have a history of mental illness and of veterans discharged from service with NP conditions. The psychiatrist advises in emergency cases where immediate hospitalization appears indicated. Therapy is not attempted unless the problem is superficial and may be dealt with on a superficial basis. If psychiatric treatment is indicated, the employee is referred to a private psychiatrist, a local psychiatric clinic, or the Veterans Administration Mental Hygiene Clinic.

The methods used by the employee rela-

tions unit to solve the employees' problems include such environmental manipulation as change of duty, conferences with the employee and/or his supervisor to gain understanding of the employee and his problem, and referral to appropriate social or medical agencies. The members of the unit make home visits also and are especially helpful to sick employees who live alone in Washington. In these cases, hospitalization is arranged if necessary and communication with the family is established.

An important function of the employee relations unit is to maintain excellent working relationships with various social and medical agencies to which employees may be directed. At the employee's request, appointments may be made with the appropriate agency, and social data already obtained are supplied to that agency.

The final step in the program of the employees relations unit is the follow-up of employees seen in the unit. Within a month, a personal or telephonic contact is made with the supervisor or employee, or both, to learn the present condition or adjustment of the employee. It is determined whether recommendations have been adequately followed out and whether further action or referral is necessary. The physicians are kept informed of the progress of employees they have seen.

The Veterans Administration Central Office employs approximately 12,000 people. During 1946, 750 health and welfare cases were handled by the employee relations unit. This represents nearly 7% of the total employees. It is probable that a much larger number of employees are in need of help for emotional problems, since 1 man of every 5 employed in industry is said to have need of psychiatric assistance(8).

The following table shows the disposition of approximately 500 employee cases:

Referred to the psychiatrist.....	111
Referred to U. S. Public Health Service.....	85
Referred to local Veterans Administration clinics .....	57
Assisted in obtaining hospitalization.....	35
Reassigned .....	36
Referred to the Civil Service Commission for termination of service.....	41
Retired on disability.....	26
Returned to work.....	96

Half of 354 health cases were considered due to emotional conditions. It is probable that a number of psychiatric cases were carried under physical diagnoses because of the psychosomatic components.

Among the leading symptoms which indicate psychiatric difficulties in an employee are frequent visits to the medical unit for minor reasons, absenteeism, frequent tardiness, and frequent changes of employment(9). The frequent occurrence of accidents is now recognized as related to personality make-up and emotional trends(10). Alcoholism also interferes with job adjustment and production. Employees may show peculiar behaviour on the job which may upset the efficiency of an entire office.

The following brief case histories present examples of employees who manifested symptoms of psychiatric disturbance and of the manner in which they were handled.

AB, a 38-year-old single female secretary, was referred by her supervisor who stated that she had become inefficient, uncooperative, and disturbing in the office. In interview with the psychiatrist, the employee disclosed delusional ideas. The patient was advised to seek immediate psychiatric treatment, which she did while on a month's leave. She was allowed to return to duty upon presentation of a doctor's certificate, but within several days her behaviour was so disturbing to her office and to her rooming house that hospitalization was arranged by the employee relations unit through community agencies.

CD, a 32-year-old divorced woman, had been employed by the Veterans Administration for only several months when she was referred to the employee relations unit because of alcoholism and excessive absenteeism. In an interview with the psychiatrist, she minimized her alcoholism and attributed her absenteeism to difficulties in the home. She was referred to Alcoholics Anonymous and the local clinic for alcoholics, where an appointment was made for her. She was offered assistance in making other living arrangements. The employee did not keep her clinic appointments and it was later found she had misrepresented the home situation. Her behaviour showed no change and her employment was terminated.

EF, a 24-year-old Negro, formerly a Sergeant in the Army, was referred by his supervisor who stated that the employee had been one of his best workers but now was slow, inattentive, and nervous. The employee asked to see a psychiatrist. The interview was therapeutically oriented when it became evident that the young man was very ambitious and had fairly realistic plans to better himself. He was in the midst of a divorce from

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his wife but was facing the threat of marriage to another woman which would interfere with his plans for the future. He was able to recognize his problems and expressed confidence that he could handle them now that he knew their nature. Follow-up several weeks later revealed that he had returned to his previous work level.

Good morale and good leadership are basic factors in promoting efficiency and productivity in industry. The elements of good morale have been described as consisting of an adequate aim or purpose in the common undertaking, a sense of one's competence and value, and a feeling that one is important as an individual in a group of similar people(11).

The Hawthorne experiments at Western Electric demonstrated that production depended less on actual work conditions than upon various intangible factors which affected personal attitudes and the state of mind of the workers. It was felt that a desirable morale could best be brought about by personnel work of the repeated interview type, carried out by well-trained people who understand some of the principles of human behaviour and feeling(12).

Leadership, another essential in promoting effective production, should stem from top management down through all levels of supervision. Supervisors should be selected not only on a basis of proficiency at a certain job but also on a basis of personality. After selection, the potential leader should be trained in the methods of supervision. On the basis of our experience in the Veterans Administration employee relations unit, we are impressed that supervisors must be given on-the-job training in managing employees and must be educated in the principles of human behaviour and social interaction.

Management must also be educated concerning the need for an industrial health program and should be made aware of the savings which it produces, both in terms of money and human values. The U. S. Public Health Service has shown that a health program costing \$8.00 a year per employee yields results to management amounting to \$12.00 a year(13). Psychiatry plays an important part in a health program and has a share in this saving.

Industrial psychiatry has been defined as a phase of preventive medicine which aims to prevent serious mental and emotional maladjustments among industrial employees (14). In order to carry out this duty, the industrial psychiatrist acts in a dual role in that he not only serves the individual employee directly in regard to the employee's personal and job adjustments, but he also serves in an advisory capacity to management in promoting efficiency and production on the job through good supervisory leadership and the maintenance of good morale among employees.

#### SUMMARY

1. The literature of industrial psychiatry and the development of mental hygiene programs in Federal agencies in Washington are reviewed.
2. The organization and administration of the employee counseling program in the Veterans Administration Central Office are described.
3. It is the function of the industrial psychiatrist to aid the employee in his job adjustment and to advise personnel officers as to the aspects of preventive psychiatry.

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# THE ADDICTION LIABILITY OF METHADON (AMIDONE, DOLOPHINE, 10820) AND ITS USE IN THE TREATMENT OF THE MORPHINE ABSTINENCE SYNDROME<sup>1</sup>

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*Lexington, Kentucky*

The discovery of any potent analgesic drug always raises the question of the danger of addiction to the drug. The idea that the drugs of the phenanthrene series (morphine and related compounds) were the only analgesics which possessed addiction liability had to be modified when Himmelsbach(1) showed that demerol was an addicting drug. Accordingly, when methadon (which has also been called 10820, amidone, and dolophine) was shown to be a potent analgesic which possessed many of the pharmacologic actions of morphine(2), a study of its addiction liability became necessary. The studies, which are reported here, were carried out under the auspices of the Drug Addiction Committee of the National Research Council, and were conducted at the U. S. Public Health Service Hospital, Lexington, Kentucky.

In these studies particular attention was paid to the qualities which Himmelsbach(3) has regarded as characteristic of addiction to the opiate drugs: tolerance, physical dependence, and habituation, or emotional or psychic dependence. *Tolerance* is defined as the gradual decrease in the effect produced on repeated administration of the same dose of the drug. *Physical dependence* refers to an altered physiological state brought about by the repeated administration of a drug which necessitates continued use of the drug to prevent the appearance of a characteristic withdrawal illness (the abstinence syndrome). *Habituation* means emotional or psychic dependence upon the use of a drug. Of these three qualities, habituation is now regarded at Lexington as the most important and should be given the greatest weight in assessing the addiction liability of a drug.

After tolerance and physical dependence

to methadon had been established experimentally in animals(4) studies on the administration of methadon to man were started at the Lexington hospital. When single doses of 5-10 mgm. of methadon were given to former morphine addicts, there was no evidence of euphoria. However, administration of doses of 20 mgm. or more of methadon subcutaneously to former morphine addicts regularly produced unmistakable euphoria. The patients began to talk more freely with each other and with the attendants; became boastful; compared the effects of the drug favorably with those of morphine; asked how it could be obtained, etc. The euphoria was slower in onset than that after the administration of morphine and persisted for as long as 48 hours after doses of 30-60 mgm. Intravenous administration of 20-30 mgm. of methadon produced particularly striking effects. The addicts would writhe in joy, and comment as follows: "O boy! that's a fine shot of dope. Can we get it outside? Who makes it? Will it be put under the Harrison Law?" The subjects were unable to distinguish the effects of methadon from those of heroin or dilauid when the drug was given intravenously. Methadon became the favorite drug of many of the patients who received it intravenously, and they requested methadon in preference to morphine, heroin, or dilauid when called for further experiments.

## DIRECT ADDICTION IN MAN

Fifteen former morphine addicts, who volunteered for the experiments, were given 4 doses of methadon subcutaneously daily for periods varying from 28 to 186 days. The dosage was increased, as tolerance permitted, from an initial level of 5-10 mgm. per dose to as high as 100 mgm. per dose in 3 of the cases who received the drug for the longest period of time.

When the men were receiving only 5 mgm.

<sup>1</sup> Read at the 104th annual meeting of The American Psychiatric Association, Washington, D. C., May 17-20, 1948.

<sup>2</sup> Senior Surgeon, U.S.P.H.S. Hospital.

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of methadon per dose, no evidence of euphoria or sedation could be detected and the men complained that the drug did not produce the pleasurable sensations they desired. When the dosage was elevated to 10-15 mgm. 4 times daily definite evidence of sedation and euphoria appeared, and the patients began to express satisfaction with the effects of the drug. These effects did not become manifest until the third or fourth injection of the increased dosage. Apparently, these actions of methadon are cumulative. The behavior of the men then became strikingly similar to that seen during addiction to morphine. They ceased nearly all productive activity and spent most of their time in bed in a dreamy semisomnolent state, which they termed being "on the nod," or "coasting." This semisomnolence is regarded as a highly desirable state by addicts. The patients neglected their persons and their quarters.

Psychological tests<sup>4</sup> showed changes similar to those seen in morphine addiction. As measured by the Otis test, there was a loss of 6.8 IQ points in the week prior to withdrawal as compared with the week prior to addiction. The arithmetic test was performed at almost the same rate of speed, but there were more errors. Visual-motor coordination and perseveration tests were performed at somewhat higher rates of speed, but with considerably more errors. The greater rapidity of visual-motor response and the increased fluidity of shift appear to be vitiated by greater inaccuracy. A decrease in the efficiency of intellectual functioning is indicated.

The subjects used in this study appear to be diverse in personality structure as measured by the Rorschach methods. However, in every case there were changes between the test administered prior to addiction and that administered during addiction. These changes may be said to fall into two general categories. Those subjects whose primary difficulty appeared to involve inhibition conflicts in relation to the expression of their instinctual drives showed, during addiction, a decrease in the guilt and anxiety associated with these conflicts, accompanied

either by increased sensuality, immaturity, and egocentricity or by decreased accessibility to affective stimulation. Where records of the same subjects were compared while on morphine sulfate and on methadon, the first result occurred most often with methadon, while the second most often accompanied the use of morphine. A second group, whose original records suggested that they were relatively free from anxiety, but were egocentric, self-centered, and emotionally withdrawn, revealed a greater accessibility to affective stimulation during addiction. When subjects in this group were compared while on morphine sulphate and on methadon results were quite similar for both drugs.

As the experiment proceeded, partial tolerance to the sedative actions of the drug became evident. The men, if maintained on a given dosage level, ceased to stay in bed, began to play cards, etc. When the dosage was elevated the men became somnolent, and, after they had remained on the new dosage level for a varying period of time, tolerance to the sedative effects again developed.

Definite tolerance to the pain threshold elevating action of methadon appeared during the experiment and is shown in Fig. 1.

No serious toxic effects appeared during addiction, even though some of the men received as much as 400 mgm. of the drug daily. Pulse and respiratory rates and systolic blood pressures were depressed throughout addiction. Five of the men developed a mild normochromic, normocytic anemia after the third month. The anemia, however, did not progress. All the subjects developed severe inflammation and induration of the skin over the injection sites.

#### WITHDRAWAL OF METHADON

When the drug was abruptly withdrawn very little evidence of an abstinence syndrome was observed in 3 subjects who had received the drug for only 28 days. Definite evidence of physical dependence was, however, detected in all 12 subjects who received the drug for 56 days or more. The abstinence syndrome which developed was slower in onset, milder, and perhaps more prolonged than abstinence from morphine. The men had no complaints for the first 2 days. Thereafter, they complained of weak-

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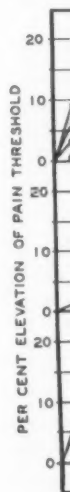


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<sup>4</sup> Acknowledgment is made to Miss Mary Daingerfield of the hospital staff for the psychological observations reported.

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ness, anxiety, anorexia, insomnia, and tinnitus. These symptoms persisted for as long as 6 to 8 weeks. Very few signs of disturbances in autonomic function (yawning, lacrimation, rhinorrhea, etc.) were seen. Vomiting and diarrhea were seldom observed. All subjects developed fever, elevated respiratory rates, elevated blood pressure, and tachycardia. Fig. 2 shows the

totalled and one thus obtains a semiquantitative estimate of the intensity of abstinence. The scoring system has been carefully calibrated on men with strong physical dependence to morphine. Such cases usually score 50 to 60 points in the second and third days of abstinence. Scores of less than 15 are regarded as nonsignificant, scores between 15 and 20 as very mild, and scores of 20 to

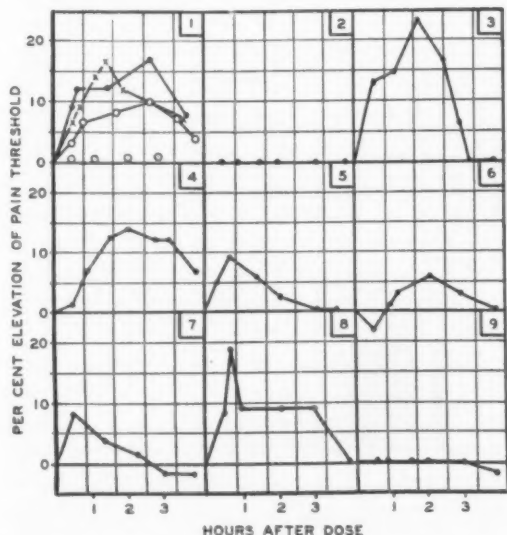


FIG. 1.—Development of tolerance to the pain threshold-elevating action of methadon in Subject No. 729. Curve 1. Solid circles: greatest response to a 5 mgm. dose of methadon prior to addiction. Open circles: smallest response to a 5 mgm. dose. Crosses: average response to a 5 mgm. dose. Open circles with dots: control after injection of distilled water. Curve 2. Response to a 5 mgm. dose after 7 days of addiction. Curve 3. Response to a 15 mgm. dose on the 8th day of addiction. Curve 4. Response to a 15 mgm. dose after 14 days of addiction. Curve 5. Response to a 15 mgm. dose after 21 days of addiction. Curve 6. Response to a 25 mgm. dose after 28 days of addiction. Curve 7. Response to a 30 mgm. dose after 35 days of addiction. Curve 8. Response to a 45 mgm. dose after 42 days of addiction. Curve 9. Response to a 45 mgm. dose after 56 days of addiction.

intensity of abstinence from methadon as compared to abstinence from morphine.

The intensity of abstinence was estimated according to the point-scoring system of Himmelsbach. In this system arbitrary values are assigned to the various signs of physical dependence—1 point for lacrimation, 3 points for mydriasis, 5 points for a bout of vomiting, and so on. The scores are

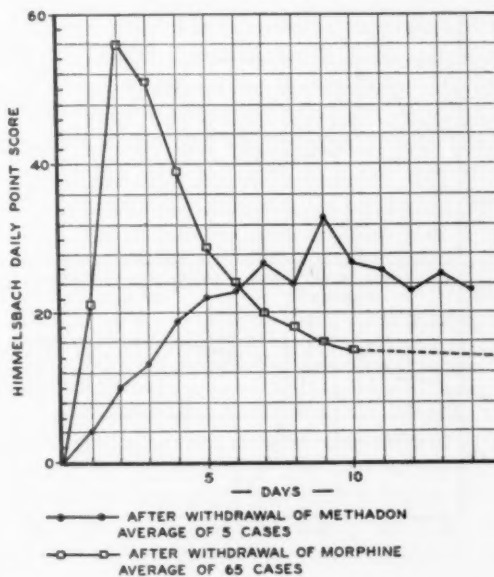


FIG. 2.—Intensity of abstinence after administration of methadon for  $4\frac{1}{2}$  to 6 months.

35 as fairly mild. The curve obtained on 5 men who received the drug for 142 to 186 days illustrates very well the slow development of the syndrome of abstinence from methadon as well as its mildness as compared to the course of abstinence from morphine.

#### USE OF METHADON IN THE TREATMENT OF ABSTINENCE FROM MORPHINE

Methadon has now been administered to 17 men who were showing signs of abstinence from morphine. In all cases the intensity of abstinence has been greatly reduced or abolished (Fig. 3).

Methadon has been substituted for morphine in 12 subjects who were strongly addicted to morphine. Fig. 4 shows the average intensity of abstinence following preliminary withdrawal of these men from morphine. This preliminary withdrawal was carried out

to prove and to assess the degree of physical dependence to morphine. The men were then returned to morphine and after 7 days methadon was abruptly substituted for the morphine at an average ratio of 1 mgm. of methadon for each 4 mgm. of morphine. The substitution was completely smooth. No signs of physical dependence appeared and the men did not notice the change. When the

is substituted for morphine and the dosage of methadon is rapidly reduced over the course of 7 to 10 days. It is the most satisfactory method of withdrawal we have used. It is, however, necessary to emphasize that, though physical dependence can be handled nicely with this technique, the emotional factors in withdrawal remain and that loss of emotional control occurs just as frequently following substitution and withdrawal of methadon as

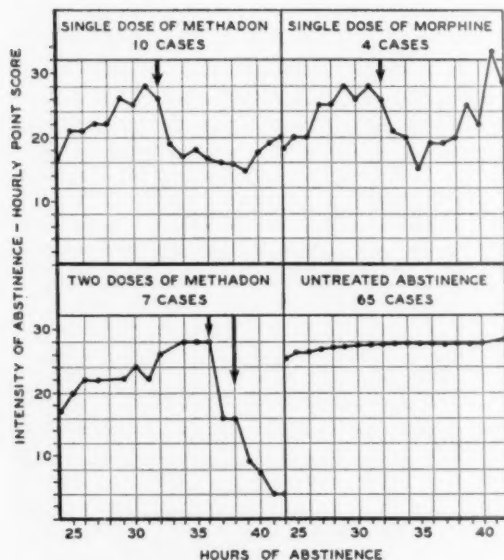


FIG. 3.—Relief of abstinence from morphine by methadon. The intensity of abstinence is expressed in hourly points (31). *Upper left:* Average point scores of 10 subjects who received 21 mgm. of methadon at the 32nd hour of abstinence. Arrows indicate injection of drug. Note prompt decline in the intensity of abstinence and prolonged effect. *Upper right:* Average point scores of 4 of the same subjects who received 30 mgm. of morphine at the 32nd hour of a subsequent abstinence. Note decline in the intensity of abstinence followed by a return to the original level about the 7th hour after the injections. *Lower left:* Average point scores of 7 subjects who received methadon at the 36th and 38th hour of abstinence. Note almost complete abolition of abstinence 4 hours after the second dose. *Lower right:* Course of untreated abstinence from morphine based on 65 control cases of Himmelsbach.

methadon was abruptly withdrawn a mild abstinence syndrome ensued which was quite similar to, but even milder than, that seen after direct addiction to methadon. This fact forms the basis for our present method of withdrawing morphine from addicts in the clinical section of the hospital. Methadon

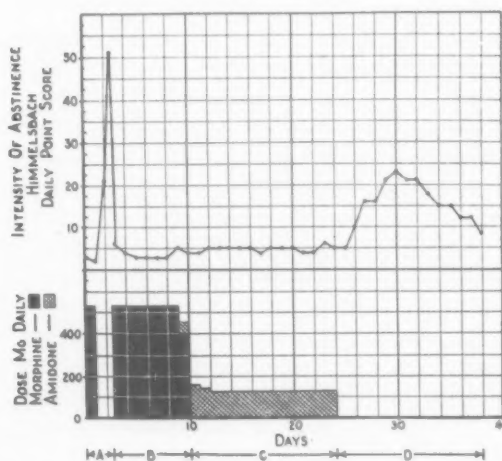


FIG. 4.—Substitution of methadon (amidone) for morphine, average of 12 cases. A, preliminary withdrawal from morphine. B, restabilization on morphine. C, substitution of methadon. D, withdrawal of methadon.

it does after withdrawal of morphine. It should be emphasized that withdrawal is only the first and least important step in the treatment of narcotic addiction.

Methadon is an optically active substance and the dextro- and levorotatory isomers have been resolved and studied separately. The levorotatory isomer accounts for all the analgesic effect of the racemic form and also for all the addiction liability. Levomethadon relieves and suppresses abstinence from morphine, whereas dextromethadon is totally inactive in this respect (5). Racemic isomethadon, a structural isomer of methadon, is only one-fourth as potent as racemic methadon in relieving or suppressing abstinence from morphine. Following withdrawal of isomethadon from post-addicts who had been experimentally addicted to isomethadon for 56 days, an abstinence syndrome came on very rapidly. Abstinence from isomethadon

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was, qualitatively, very similar to abstinence from morphine. All the signs of disturbances in autonomic function which are so characteristic of abstinence from morphine were noted. Quantitatively, abstinence from isomethadon was more severe than abstinence from methadon, but less severe than abstinence from morphine(5). Both levomethadon and isomethadon must be regarded as addicting drugs.

### DISCUSSION

The results leave absolutely no doubt that methadon is a dangerous addicting drug. Tolerance has been shown to develop to many actions of the drug in both animals and in man. Physical dependence to methadon has been shown to occur in dogs, and a real, however mild, physical dependence occurred in man after prolonged administration of larger doses. The drug in sufficient dosage produces a type of euphoria which is even more pleasant to some morphine addicts than is the euphoria produced by morphine. The similarity of the behavior of the subjects addicted to methadon to the behavior of men addicted to morphine; the similarity of the psychological changes; the requests for increases in dosage during addiction—all point to the development of strong habituation to the drug. Unless the use and manufacture of methadon are controlled, people with neurotic and psychopathic personalities will abuse it. Following our recommendation methadon has been brought under control of the Harrison Narcotic Law.

Morphine addicts like methadon because it produces a long sustained type of euphoria and because it will suppress signs of physical dependence when substituted for morphine. These qualities make methadon a particularly dangerous drug. The veteran morphine addict is skilled in ways of obtaining drugs illegally and has few scruples about introducing nonaddicts to the use of the drug. It requires some time for a person who becomes addicted for the first time to acquire the education and contacts necessary for illegal trafficking in narcotics. Addiction to a drug which is popular with morphine addicts is likely to spread much more rapidly than addiction to a drug which is liked only

by people who have never been addicted to morphine.

The view that the addiction liability of methadon is slight because physical dependence to the drug is mild in man is very dangerous. Addicts are unwilling to bear even mild discomfort and would continue to use methadon despite the low grade of physical dependence to the drug. A mild grade of physical dependence might actually encourage addicts to use the drug, since the penalty (from the viewpoint of physical suffering) would be less if they were forcibly interrupted. Furthermore, addicts repeatedly relapse to the use of morphine long after withdrawal, not because they are suffering with any physical distress, but because they desire the euphoria produced by the drug or the relief of the psychic and emotional discomfort which it gives. This is simply another way of saying that habituation is more important in addiction than in physical dependence.

It is hoped that the addiction liability of methadon will be clearly understood and accurately reported by all who write professionally and for the public press, thus avoiding unnecessary addiction such as occurred with demerol. It was disquieting to read in the American Weekly, a syndicated Sunday supplement magazine, for October 19, 1947, under the headline "New Drug for Breaking the Dope Habit" that ". . . methadon does not produce the euphoria, the feeling of exaltation which comes to the addict from cocaine or other narcotics," and ". . . it is the safest narcotic drug yet produced."

What is the danger of addiction to methadon in ordinary, legitimate medical usage? It is probably equal to the danger of addiction to morphine in the same circumstances—that is to say, slight. Mild signs, possibly indicative of developing physical dependence, have been seen in only 2 of 19 cases on temporary abrupt withdrawal of methadon after its administration for pain relief in cancer for from 35 to 180 days(6). As long as the dosage of either morphine or methadon is held to the minimum required for pain relief, there is very little likelihood of addiction to either drug. The danger of "medical" addiction is great only when

physicians mistakenly believe that a drug is not addicting and are careless in its use.

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## FLIGHT FROM INSIGHT

ALLEN B. WHEELIS, M.D.,<sup>1</sup> STOCKBRIDGE, MASS.

A young woman of 33 years was admitted late one evening to the Austen Riggs Foundation, suffered mounting anxiety and a feeling of being trapped, and departed against medical advice 4 days later, leaving behind a fragmentary story of unusual interest. From the beginning she was considered eminently treatable, and her abrupt departure was thought to be a flight from insight. The therapist made no interpretations, but the nature of his profession and his attentive interest in her remarkably meaningful verbalizations constituted a threat of future insight. Her case is reported because of the important question it raises: What can one do in a hospital setting to augment the ego resources of an anxious patient sufficiently to enable that patient to tolerate insight? Varying measures may, of course, be used successfully with different patients. An attempt will be made here to answer this question with reference only to this patient, but with the thought that the measures suggested may be applicable to others.

The patient, Jean S., was the head nurse of the pediatric department of a small mid-western hospital.<sup>2</sup> Professional colleagues held her in high esteem, knowing her to be able, conscientious, and ambitious. Many of them, in fact, knew her to be overconscientious. Unable to lay aside the problems of her patients at the end of a working day, she often would go back to the hospital at night to check up on some sick child. On her bedside table at home was always a stack of pediatric literature, this being the only reading she allowed herself. She was said to be happily married to a well-known internist who was the chief of the medical service of the hospital in which she worked. Hers had been an active, useful life, without inner distress until 3 months before her admission. At that time she had developed a profound sense of social and professional inadequacy, feelings of depression, anxiety, and obses-

sional worry about the patients under her care. She cried frequently without obvious reason. Although she employed a good housekeeper she came to consider herself a poor wife because of being out of touch with certain domestic details—because, for example, she did not know where certain of the bed linens were kept.

When seen by the admitting physician on the night of her arrival she was pacing the floor in obvious agitation. Her face was somewhat wide, and she wore glasses with thick lenses. Though not pretty, there was a certain charm in her manner. Upon his entrance she turned instantly to the physician as if to cling to him. It soon appeared that she knew the precipitating cause of her illness, and this she straightforwardly related, occasionally breaking into tears.

Three months previously she had returned to the hospital at midnight because of her concern for a child critically ill with diphtheria. She stood by his bed for a half hour or more, closely observing him. Presently his labored breathing became faint. She sent the student nurse to get the resident. In the ensuing delay the child's breathing stopped entirely. Cyanosis became marked. She opened the tracheotomy set which was at the bedside, took out a scalpel, and incised the child's neck. "Blood was everywhere. I cut too far. His trachea was so small and slippery. I'd get hold of it and then lose it in all that blood!" A few minutes later the resident arrived and, with some difficulty, completed the operation. The child died the following morning at 9:30, Jean having remained continuously with him. She was not censured for her act; indeed, several of her colleagues commended her for a brave attempt. She, too, felt that she had acted rightly and subsequently was aware of no sense of guilt. Nevertheless, it was immediately after the death of this child that her symptoms began.

At the conclusion of this first interview she asked many questions about the hospital to which she had just been admitted. Her

<sup>1</sup> From the Austen Riggs Foundation.

<sup>2</sup> Certain factual aspects of this case which might serve to identify the patient have been falsified.

expectation was that every minute of the day would be rigidly scheduled in group activities, beginning with morning calisthenics and continuing with organized sports and formally conducted classes in various aspects of mental hygiene. She was distressed at the prospect of being left to her own devices for even a small amount of time, and began to doubt the wisdom of having left home.

The following morning, in her second interview, she spoke of her husband, saying that she was lonely without him and could not bear to be separated from him for long. He was, she added, 25 years older than she. He had been one of her teachers in nursing school; and his older daughter by his first wife had been her friend and classmate. He was of an easygoing, placid disposition. "No matter what happens—even this upset of mine—he takes it in his stride." She had married him "for companionship and sexual satisfaction." Though there was no "romantic love" between them, she had become deeply attached to him and considered their marriage ideal. He had told her that his first wife, who was now dead, had been stupid; and this made her feel superior. But to some extent she felt inferior, too; for his first wife had borne him 2 daughters of whom he was very proud. Shortly after his marriage to Jean, 1½ years previously, he had given his new wife permission to make any alterations in the house which she desired. Selecting a time when her husband and stepdaughters—as well as the servants—were away, she disposed of all the old furniture and household equipment, replacing them with modern articles of her own choosing, and achieving thereby "a certain vindictive triumph." Their sexual relationship was said to be highly satisfactory. At one time she had wanted children very badly, but now she was not so sure. "My period," she added suddenly, "is five days overdue now, and I'm afraid I may be pregnant."

Without transitional remarks she went on to speak of her father. He had died 10 years previously of coronary thrombosis when she was 23. He was a serious, hard-working man, a chemist for a commercial drug house. Often he would work late at night in his laboratory, and Jean would wait up for him, preparing a midnight supper on his return.

Dispositionally he was sober, reflective, and reticent. His only hobby was the hybridization of flowers which he cultured in a small greenhouse with methodical care. He was a lonely man, his wife having died many years previously leaving him with a large family. He never considered remarriage, feeling that this would be bad for the children. He was fond of all his children, and was particularly attached to Jean, though in an undemonstrative way. When she went away to school, for example, he became devoted to her dog, and would take the dog for the same long walks that he had previously taken with his daughter. As Jean grew older she became closer and dearer to her father and was obviously his favorite. He was in much pain during his last illness, and she would wake in the night when he groaned, though louder noises of a different nature did not disturb her. Near the end he once called her into his room and said, "I want you to know that never in your life have you caused me any displeasure or worry. Well . . . that's all. You can go." After his death she was quite lonely for a year or more, and had difficulty studying. She hung around the drug store in search of companionship, gained weight, and failed the first year of nursing school. "I never thought much about marriage before he died," she said. "I always knew my brothers and sisters would marry and leave home, but as for me . . . I planned to stay with him and become closer to him."

Because of anxiety, restlessness, and crying she was seen again later during the same day, her second day in the hospital. Her menstrual period had begun, but her relief at not being pregnant did not affect her anxiety. She said that she was lonely and wanted to get back to her husband, and asked why she could not go home and be treated as an office patient. When the good reasons for her remaining were explained she reluctantly acquiesced. Presently she said, "These talks have stirred up a whole lot of things in me. I think I have a sense of guilt about my mother." She then vividly recalled the occasion in her ninth year when she learned the nature of her mother's illness. Her father and the doctor had been standing in the front yard, and though they spoke in undertones she overheard the diagnosis.

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Running into the house, she triumphantly sang out to her brothers and sisters, "I know what's wrong with Mamma! She's got cancer!" Not knowing the significance of what she had said, she was taken aback by the sudden hush which fell over the room. Several weeks later, as she was having Sunday dinner in the home of a neighbor, one of the adults came late to the table, remarking quietly, "Mrs. S. has just passed away." It was assumed that the child did not understand this, and during the ensuing hour the family joked, ate, and talked of trivial matters. Finally Jean could endure this no longer. Rising from her place, she said, "I know my Mamma is dead. I want to go home."

On the evening of her second day in the hospital she wept, required continuous nursing care, wanted to leave immediately, and began packing her bags. It was only with difficulty that she was dissuaded. She refused to take anything more than an average dose of sedative, which was without appreciable effect. On entering the therapist's office the following morning she said that a phrase had been going around and around her mind: "Don't make me stay! Don't make me stay!"<sup>3</sup> She immediately elaborated this, pleading for permission to leave and rationalizing her sense of urgency and danger. "Please let me go! My husband needs me. I know how lonely he gets in that big house all alone. I'll be all right at home. I understand the cause of my illness now."

"How do you formulate this understanding?"

"I have a terrific sense of responsibility to my patients, and feelings of guilt in reference to my parents and brothers and sisters."

Questions relevant to this statement led to a description of her nursing career. At first she had wanted to specialize in venereal diseases, but during her last year in school it had come to her "all in a flash" that she wanted to do pediatric nursing. She never regretted this decision; she loved children and loved her work. In the year after her graduation she and one of her friends, Ann, worked on a ward for defective children.

<sup>3</sup> At no time was she confined in a locked building or otherwise forcibly held.

There were cases of Mongolian idiocy, hydrocephalus, spina bifida, and the like. She referred to these children as "vegetables" and felt that they would be "better off dead." After all, they were going to die sooner or later anyway, and in the meantime they were a source of endless expense and heartbreak to their parents. Ann shared these views and once suggested—half jokingly and half seriously—that they dispose of some of the worst cases. The plan proposed was as follows: On a night when the ward was quiet and no doctors or other nurses were about, they would prepare a syringe of insulin, would insert the needle into the child's anus, and make the injection through the rectal wall into the ischio-rectal fossa. At autopsy nothing unusual would be found, and the death would be attributed to the congenital illness. Jean approved in principle but declined to cooperate, and the matter was not mentioned again. The ward had a high mortality that year, however; and most of the deaths occurred on nights when Ann was on duty alone. Jean had no doubt that Ann was carrying out her plan, and she admired her courage. Once, while adjusting a surgical dressing on a child who had recently been operated on for an appendiceal abscess, Jean noticed that the drain had slipped out. She realized the significance of this, but did not report it. The child died 2 days later of peritonitis. On another occasion, in the case of a child with pneumonia, she administered steadily decreasing doses of penicillin in violation of the doctor's written order; this patient died, too. Both of these children were "vegetables," she said, and could have survived no more than a year or two in any event. She believed herself to be acting humanely and had never felt regret.

She had often thought of these matters 2 years previously when Dorothy, her oldest sister, had been pregnant. Dorothy already had one child, a 4-year-old boy, who occupied the room adjoining Jean's. Frequently Jean would be waked at night by her nephew's crying and would think angrily, "That brat is disturbing my sleep!" Then she would take herself in hand and say, "It's wrong to feel that way. I really love my nephew." Lying awake in the dark she would then fall to speculating about what she would do if

Dorothy's second child were born defective. She hoped that she would have the courage to put it out of the way, but could not be sure. At this time she was eagerly awaiting her marriage, which was scheduled to take place on the day after her sister's delivery. Dorothy had vigorously but unsuccessfully opposed this marriage on the grounds that Jean's fiancé was "old enough to be your father." Finding that she could not prevent it, however, she asked Jean to wait at least until her baby was born, and to this Jean reluctantly acceded. Dorothy's labor proved to be a difficult one. The infant sustained a brain injury during the instrumental delivery, and died 24 hours later. "I'm glad he died," she said; "because otherwise he might have been spastic. We went ahead with our marriage the next day as planned, but I was terribly, terribly upset."

On the evening of this third day in the hospital she was more agitated and cried almost continuously. Her thought content was the reiterative, "I'm lonely here. My husband needs me. I'm not sick enough to be in a hospital. I've got to get back home." She made several telephone calls—to her husband, her referring physician, and the therapist. All advised her to stay, at least for a 2-week period of clinical study and evaluation, but she would not give in. Reluctantly her husband agreed to come for her. When seen on the following day she was relatively calm, knowing that she was to leave within the hour. The discussion was concerned with practical arrangements for psychotherapy as an office patient while she lived at home. Toward the end of this interview she said, "When I was four or five, my younger brother died of pneumonia. That left me the youngest child." She paused meditatively, then added, "I know this illness has a lot to do with death, but I don't know what that means."

#### DISCUSSION

Features of this case of unusual interest are the rapidity and spontaneity with which the pathogenic material was presented, and the close correlation between the recounting of this material and the increase of anxiety. Metaphorically expressed, the historical material was a rich ore from which metal could

be extracted with little refining. Her brief account of her life is studded with clues which not only indicate the existence of powerful hidden motivations but also identify their nature, directions, and some of their interconnections. The inner conflicts are visible with remarkable clarity through the transparent defenses. One had the feeling that no more than a slight psychic jolt would have been needed to make the elements of this story fall into place before her eyes, and form a pattern meaningful but horrible to her. It was the imminence of just such a jolt, it is postulated, which accounts for her mounting anxiety, her feeling of being trapped, and her final flight. Her unconscious impulses were so alien to conscious ideals and motives that she would have had difficulty accepting them under any circumstances. In the circumstances which did in fact exist, one may surmise the presence of an added deterrent: unconsciously she may have felt that her marriage could not survive the insight that threatened to break upon her.

Seldom is the oedipal drama of childhood acted out in adult life with such fidelity to the original script. The "mother" (her husband's first wife) dies, whereupon she marries her "father" and becomes the stepmother of her siblings (classmates). It is reasonable to suppose that her choice of pediatric nursing as a career was an attempt—which proved unsuccessful—to curb her murderous hostility which, it may be conjectured, originally was directed toward her younger brother. It may be speculated that defective children had for her the unconscious significance of injured children, children who were victims of destructive violence, and that the sight of their injury or deformity acted as a stimulus to her own repressed hostility. The doctrine of euthanasia for such children—well rationalized in terms of sparing the parents needless suffering and expense—provided a temporary outlet for this hostility in a guise that avoided detection. Finally her attempt to save the life of a diphtheritic child bore such a close resemblance to murder, and was so heavily contaminated with unconscious hostile impulses, that her precarious defenses of repression and reaction formation broke down. As she truly said, "This illness has a lot to do with death. . . ."

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Psychological tests were not done because of the brevity of her stay in the hospital. However, it was clinically evident that she was an intelligent, well-endowed woman. Her psychological mindedness was such as to have enabled her eventually to achieve thoroughgoing insight. Before insight could be tolerated, however, her anxiety would have had to be relieved, or at least attenuated. In retrospect it would seem that the following measures might have achieved this end.

First, the therapist should have adopted an authoritative, paternal attitude. In her second interview she made it plain that she equated husband and father and that she was now in dire need of a strong and good father. Her husband was apparently a good father, but was passive so far as her illness was concerned. In view of her mounting anxiety she needed a father of greater authority who would bulwark her defenses. Had the therapist played such a role it is likely that she would, to some extent, have been reassured, would have felt that her unconscious hostility was not so destructive, and consequently not so much to be feared as she had supposed. Even so early as the first interview she doubted the wisdom of having come to the hospital. The unconscious question which prompted this doubt is likely to have been, "Is he (the therapist) a stronger father than the one I left at home? Is he any more able than my husband to relieve my guilt?" Relative passivity on the part of the therapist made her decide, 4 days later, in favor of her husband.

Second, the therapist should have dampened the free and rapid communication of highly pathogenic material. He should have made it clear to her that these things were of great importance and that in time they would be fully discussed, but that for the moment it was best to talk more of her present daily activities.

Third, a more concerted effort should have

been made to reinstitute compulsive defenses. Her initial questions about activities indicated that she was aware of a need for the support which could be derived from compulsively performed tasks. She was, indeed, given a schedule of activities, but her anxiety was such that she could not follow the schedule unaided. The help of a special nurse or companion for a few days might have enabled her to do this.

With these therapeutic measures the psychiatrist might have been able to keep the patient under treatment and arrange for the insights to be achieved at a slow pace, in tolerable doses.

In a letter written 6 months after discharge she reported herself to be well. On arriving home she had made a few abortive attempts to arrange for treatment as an office patient. She had called several analysts, had found that they were too busy to take her, and then had tried no further. She received no subsequent treatment. She did not return to work, but was planning shortly to take an administrative nursing job.

Evidently her initial way of dealing with anxiety was by blotting out all meaningful content; for in the 19 days following discharge she read 14 novels. Thereafter she kept herself busy with household duties and physical sports. She got a new housekeeper to replace, she writes, "a young woman with whom I felt very uncomfortable." She completed the decoration of her home and took over many household duties such as shopping and the planning of meals. She began playing tennis and swimming, and later organized a swimming club for hospital nurses. In the course of these activities her symptoms were largely relieved, without insight. It remains to be seen whether the renewed defenses can continue successfully to protect this highly vulnerable girl should she encounter new critical stresses.

# PROCEEDINGS OF SOCIETIES<sup>1</sup>

## AMERICAN PSYCHIATRIC ASSOCIATION

### COMMITTEE AND OTHER REPORTS

#### REPORT OF THE EXECUTIVE ASSISTANT

Since last reporting to you, a Medical Director has been appointed and I feel that this appointment will greatly enhance the services that the offices of the Association can render to the members and to the committees.

Since Dr. Blain has assumed office, the question has come up in Executive Committee meetings of where the central office of the Association should be. It is the opinion of your Executive Assistant that this problem should be carefully studied before any final move is decided on. There may be advantages in having the offices in Washington, New York, and Toronto, as is now the case, or it may be that a consolidated office would prove beneficial. In either case, I trust that Council will not make a hasty decision concerning this question.

Your Executive Committee has been fully informed and has approved of the new office of the Association in New York. The location is in the R.K.O. Bldg., Rockefeller Center, Room 412, 1270 Avenue of the Americas. We now have 1,341 square feet at \$4.00 per square foot, which is the same rate we have been paying. The total rent of \$5,364.00 will not all be chargeable to the Association as the Nursing Division and the Psychiatric Foundation will contribute toward this total. This increase in rent was included in last year's budget and has the approval of Dr. Potter's Committee on Budget.

Since the creation of the Budget Committee, the budget no longer is submitted with this report but I would like to discuss the audited statement, copies of which are in your possession. Please note that the membership account has a total income of \$87,520.45 as against disbursements of \$44,512.90, leaving a net balance of receipts over disbursements in this account of \$43,007.55. This surplus of \$43,007.55 may seem to many members a large surplus but since our fiscal year closed March 31st

the new expenses of the Association including the Medical Director's office will probably eat up a considerable portion, if not all, of this surplus in the coming fiscal year. At the present time, as you know, the Medical Director is on half time and will not go on full time until September 1948, so that our actual cost of operation will not begin to show up until fall. The true picture of this account, therefore, will not be available until the next annual meeting in Montreal.

With regard to the statement of receipts and disbursements of the JOURNAL for the past year, you will see that there has been a net loss of \$1,295.73 but because we had a cash balance carry-over of \$2,565.00, there is a surplus in the account of \$1,269.27. Here, again, when one studies this audited report, it is not the factual report that it should be, owing to the fact that the JOURNAL is late and therefore bills have not been received from the printer on the proper time schedule. In other words, when we transferred from the bi-monthly to a monthly basis last July, we should have paid from No. 1-No. 8, whereas actually we had only paid through No. 3. Until the JOURNAL is on a regular schedule, it will be impossible to make an accurate appraisal of income-disbursement relationship and the only thing I can say about this current report is that we have a deficit greater than shown.

Now, in our schedule of cash and resources, this total must not be construed as a permanent net reserve because the \$44,927.22 in the Chase National Bank will have to be carried over as a balance, at least for the next fiscal year, until it can be found out what portion of that money is needed to carry out our current program. Please note that this estimate does not include any increases in budget that may be authorized by the Budget Committee and Council. The report of the expenses of our committees is somewhat indicative of the activities of these committees and it must be noted that with the Committee on Standards and Policies most of the money spent has been furnished by the Foundation in its special work on the rating and inspection program.

In closing, I am happy to report that we have had a normal number of new applications and, after the elections on Wednesday, I think it is safe to assume that the rate of growth of the Association has been the approximate 10 per cent that it has been for some years past.

<sup>1</sup> The first part of the Proceedings, covering the 1948 annual meeting, was published in the May issue of the JOURNAL. The following reports of standing committees and other special reports were presented to the Association and approved by it during the convention sessions in Washington, D. C., May 17-20, 1948. The standing committee reports are here published in abstract only. The full reports are on file at the head office of the Association in New York and are there available for reference.



STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS FOR PERIOD APRIL 1, 1947 TO  
MARCH 31, 1948

*Cash Receipts:*

Membership Dues 1947-48.....	\$83,197.83
Membership Dues 1948-49.....	312.00
Membership Back Dues.....	1,509.50
Fellowship Certificates.....	405.00
Membership Certificates.....	99.08
Rent—Committee Psychiatric Nursing.....	700.00
Rent—AMERICAN JOURNAL OF PSYCHIATRY.....	300.00
Interest—Savings Account and Bonds.....	765.38
Insurance Refund.....	85.56
Withholding Tax Collected.....	146.10

Total Income ..... \$87,520.45

*Cash Disbursements:*

Salary—Executive Assistant.....	\$8,533.29
Clerical Salaries.....	8,290.45
Printing.....	3,833.46
Committee Expense.....	10,559.97
Telephone and Telegrams.....	423.41
Electricity.....	75.75
Rent.....	2,540.50
Postage.....	1,206.50
Insurance and Annuities.....	550.69
Check Tax.....	27.30
Traveling Expense—Austin M. Davies.....	638.70
Office Supplies.....	739.70
Subsidy—Journal.....	4,500.00
Medical Director's Expenses.....	1,482.78
Old Age Benefit Tax.....	79.35
Fellowship Certificate Expense.....	38.09
Membership Certificate Expense.....	160.23
Miscellaneous.....	832.73

Total Disbursements ..... 44,512.90

Excess Receipts over Disbursements..... \$43,007.55

Add: Cash Balance April 1, 1947..... 22,099.16

Cash Balance, March 31, 1948..... \$65,106.71

SCHEDULE OF CASH AND RESOURCES, MARCH 31, 1948

	Book Number	Balance
Chase National Bank.....	.....	\$44,927.22
Union Dime Savings Bank.....	1,115,778	4,289.68
Emigrant Industrial Savings Bank.....	137,048	4,493.17
Bowery Savings Bank.....	258,266	4,710.10
Manhattan Savings Bank.....	3,557	4,499.04
East River Savings Bank.....	98,677	2,187.50
Total Cash Balances.....		<u>\$65,106.71</u>

*Net Resources*

American Psychiatric Association (As above).....	\$65,106.71
U. S. Government Bonds.....	15,000.00
Canadian Government Bonds.....	3,057.00
AMERICAN JOURNAL OF PSYCHIATRY—Chase National Bank.....	1,269.27
Meeting Account as per Statement November 5, 1947.....	1,038.20
Net Resources Available.....	<u>\$85,471.18</u>

*Reconciliation of Surplus Account*

Surplus, April 1, 1947.....	\$42,747.68
Add: Excess Receipts over Disbursements for the Year.....	42,723.50
Surplus April 1, 1948.....	<u>\$85,471.18</u>

*American Journal of Psychiatry*STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS FOR PERIOD APRIL 1, 1947 TO  
MARCH 31, 1948*Cash Receipts:*

Subscriptions .....	\$15,943.29
Advertising .....	9,153.69
Back Numbers .....	176.67
Subsidy—Membership .....	4,500.00
Total Cash Receipts.....	<u>\$29,773.65</u>

*Disbursements:*

Printing JOURNAL (Vol. No. 103, Nos. 3, 4, 5, 6—Vol. No. 104, Nos. 1, 2, 3).....	\$20,066.74
Other Printing .....	361.11
Editorial Assistance .....	1,400.10
Medical Publication Bureau—Commission—Vol. No. 103, Nos. 4, 5, 6—Vol. No. 104, Nos. 1 through 7.....	3,112.15
Rent .....	300.00
Salaries—	
Jean M. Strenkert.....	2,028.32
Martha Lavell—Editorial Assistant.....	2,700.12
Postage .....	405.04
Check Tax .....	2.79
Telephone—1946-48 .....	400.00
Withholding and Social Security Taxes.....	54.85
Miscellaneous .....	238.16
	<u>31,069.38</u>

Excess Disbursements over Receipts.....	\$1,295.73
Add: Cash Balance March 31, 1947.....	2,565.00
Cash Balance March 31, 1948.....	<u>\$1,269.27</u>

## AMERICAN JOURNAL OF PSYCHIATRY

Non-members Subscriptions .....	2,368
Members .....	4,335
Medical Students .....	91
Free and Exchange.....	116
Total Subscriptions .....	<u>6,910</u>

*Money Due the JOURNAL as of May 1st*

Advertising .....	\$4,763.37
Subscriptions (Including 1,784 Unpaid Subscriptions).....	18,196.00
Back Numbers .....	26.25
Reprints .....	4.00
Total Due the JOURNAL.....	<u>\$22,989.62</u>

*Bills Due Lord Baltimore Press*

Volume 104, No. 4.....	\$2,582.24
Volume 104, No. 5.....	2,602.78
Volume 104, No. 6.....	2,456.78
Volume 104, No. 7.....	2,908.64
Total Due Lord Baltimore Press.....	<u>\$10,550.44</u>

## MEMBERSHIP

Dues Owning—328 Members—April 1st	
1947-48 .....	\$6,830.50
Back Dues .....	721.00
Total Due the Association .....	\$7,551.50

## EXPENSES—MEDICAL DIRECTOR—FEBRUARY 15, 1948—MAY 15, 1948

Dr. Daniel Blain—Salary—2/15-5/15 .....	\$1,875.00
Olive Bresette, Secretary—Salary—3/1-5/15 .....	583.35
Advance Deposit on Office .....	195.00
Rent—3/3-5/48 .....	506.50
Petty Cash—4/5-4/28 .....	100.00
Furniture and Carpeting .....	1,338.75
Office Supplies .....	65.03
Audograph .....	509.67
Miscellaneous .....	100.38
Telephone .....	54.55
Total .....	\$5,328.23

## ANALYSIS OF COMMITTEE EXPENSES, MARCH 31, 1948

	Total	Clerical	Traveling	Telephone Postage and Printing	General
Executive .....	\$3,939.62	\$1,010.00	\$2,379.76	\$221.76	\$1,328.10
Membership .....	643.42	.....	594.09	27.85	21.48
Public Education .....	115.68	.....	.....	.....	115.68
Program .....	714.80	.....	645.51	69.29	.....
Reorganization (Special) .....	2,396.62	.....	2,079.06	295.86	21.70
Standards and Policies .....	85.83	.....	73.34	.....	12.49
Nursing (Psychiatry) .....	21.07	.....	.....	.....	21.07
Nominating .....	323.24	.....	298.44	22.70	2.10
Psychology of Childhood .....	84.28	45.30	.....	38.98	.....
Medical Education .....	1,116.07	.....	892.76	223.31	.....
Arrangements .....	13.66	.....	.....	13.66	.....
Preventive Psychiatry .....	125.50	.....	125.50	.....	.....
Budget .....	35.16	.....	35.16	.....	.....
Ethics .....	304.50	.....	304.50	.....	.....
Research .....	259.84	.....	259.84	.....	.....
International Relationship .....	12.02	.....	.....	12.02	.....
Group for Advancement of Psy- chiatry Meeting .....	368.66	.....	368.66	.....	.....
Total .....	\$10,559.97	\$1,055.30	\$8,056.62	\$925.43	\$522.62

AUSTIN M. DAVIES, *Executive Assistant.*

## THE PSYCHIATRIC FOUNDATION REPORT

As Secretary of the Psychiatric Foundation, I wish to report on behalf of our President, Dr. Harold W. Elley of Wilmington, Delaware, what has been accomplished by the Foundation since the last American Psychiatric Association meeting in New York.

As you all know, the Psychiatric Foundation was sponsored by this Association and by the American Neurological Association, with its main purpose to achieve widespread education of laymen and to promote better standards of care in mental hospitals, to motivate active psychiatric programs

at the local level and to promote research and training that will aid with common support from all groups the necessary personnel to carry out such a comprehensive program.

I think every member will recognize the fact that working in the field of philanthropy, especially with the public, one dare not make a major mistake. It is far better to build slowly and soundly than to make claims and attempt programs which, should they fail, would destroy the very hopes that were created. Therefore, the Directors of the Psychiatric Foundation have during this past year formulated and strengthened first of all its own Board of Di-

rectors. This last May, the following Directors have been elected: Mr. Howard Brewer, Brewer & Co., Inc., Shrewsbury, Mass.; Mr. John Blackstock Hawley, Jr., Northern Ordinance, Inc., Minneapolis, Minn.; Mr. Robert M. Hillas, 41 East 42nd St., New York, N. Y.; Mr. Clayton R. Jones, Sr., Portland, Oregon; Mr. Joseph T. Mackey, Great Neck, N. Y.; Mr. Burton F. Peek, Moline, Ill.; Mrs. Brooks Stevens, Jr., Concord, Mass. While we are very appreciative of the help and support of these new Directors, this does not mean that the Board of the Psychiatric Foundation is as yet complete and it is hoped that future developments will include the widening and strengthening of the Board in terms of geographical distribution and interest.

Last fall the Board of Directors, recognizing the need of trained personnel in its field, were fortunate in acquiring the part-time service of Mr. William F. Murphy. Mr. Murphy had long experience with the John Price Jones fund-raising organization and also directed the American Cancer Society in its large public campaigns. Since joining the staff, Mr. Murphy has been intensively developing the programs and patterns through which the Foundation will work. This long detailed preparation of a program is being presented to our Board of Directors at its annual June 10th meeting and the action taken by the Board will determine how the Foundation is to move forward in a practical way with a sound clear program, not only on a national level but also on a local level.

I trust that the members present as well as the public are aware of the fact that the Psychiatric Foundation has been supporting the statistical study and preparation of the material relating to the program of rating and inspection of all public and private mental hospitals on a voluntary basis that has been the work of the Committee on Psychiatric Standards and Policies, under the able leadership of Dr. Mesrop A. Tarumianz. Manuals have now been prepared in order that this work may be carried forward. Your President, Dr. Winfred Overholser, has appointed a Central Inspection Board to expedite this program with powers to hire personnel and to administer its financing. As I mentioned before, the financing of this project is a commitment in principle by the Psychiatric Foundation and the amount estimated to be required is \$75,000 per year for 3 years, or a total of \$225,000.

The request for funds will be submitted to the Directors of the Psychiatric Foundation and I feel confident that funds will be allocated for that grant in amounts as they become available to the Foundation as rapidly as possible to meet the needs of the Central Inspection Board.

On behalf of the Directors, I wish to thank all of you who have sent us such complete information on the community questionnaires. This material is important and is being studied and correlated and it may well prove to be the first scientific beginnings of gathering information that the Foundation has attempted. It has also brought requests from many communities to help in activating psychiatric

programs through the Foundation and through its fund-raising plan.

The program of rating and inspection and the questionnaire are illustrations of how much the Foundation is the tool with which to implement the program of the Association. We are dependent on you for facts and we are dependent on you for carrying the program to lay people and to your communities. This is your Foundation and it has deeply appreciated your help and will continue to try to justify your support.

AUSTIN M. DAVIES, *Secretary*.

#### REPORT OF MEDICAL DIRECTOR TO COUNCIL

The Medical Director took office on February 15, 1948 on a half-time basis, to assume full-time duties on September 1, 1948.

He conceives his functions, concerning which there are no precedents, generally to assist the President in carrying out the desires of the Council, to stimulate, coordinate, and aid in the work of committees, and to work in the general direction of the aims of the Association, now written into the proposed constitution, with particular emphasis at this time on greater services to the membership.

#### ACTIVITIES

1. An office, at 1624 Eye Street N.W., Washington 6, was leased March 15 and has been partially furnished; a secretary, Miss Olive Bresette, has been engaged and working since March 1; and an increasing number of activities have become the subject of attention of this new office.

2. The Medical Director has spoken at the Texas State Society for Mental Hygiene meeting in El Paso, being the sole American speaker at the International Banquet in Juarez, Chi., Mexico, on the subject "Mental Health and National Welfare"; the North Carolina Mental Hygiene Society on a program with Dr. Paul Lemkau on the subject "National Planning for Mental Health"; the New England Society for Psychiatry on the subject "Functions of Medical Director of A.P.A."; and the St. Elizabeths Hospital Medical Society on the same subject.

He has attended the Conference of Branch Chiefs of Neuropsychiatry at the Veterans Administration; 2 meetings of the Committee on Tuberculosis and Psychiatry of the Veterans Administration in New York; the American Orthopsychiatric Association Annual Meeting in New York; on the program of the National Conference of Social Work in Atlantic City; the Seminar on Neurology and Psychiatry, for 4 states, in Richmond, Virginia; the National Health Assembly, representing psychiatry at the section on Chronic Disease and Old Age; on the program of the National Conference On Family Life; the monthly meetings of the Chiefs of Psychiatry of the Army, Navy, Public Health Service and Veterans Administration; and the Committee on Training of the National Mental Health Act.

The Medical Director has appeared before the

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Legislature of Virginia to assist the Commissioner of Mental Hygiene in resisting the placing of mental hospitals in an improper position with penal institutions. He appeared and spoke at the hearings on the Appropriation Bill for the Mental Hygiene Division of the United States Public Health Service before the House Subcommittee on Labor-Federal Security and joined the officers of the American Medical Association in the hearings of the House Armed Services Committee on the Draft Bill. A statement, for the A.P.A., was filed for publication, extending the A.M.A.'s position and calling attention to the serious problem in the shortage of psychiatrists, social workers, and clinical psychologists. (A copy of each of these statements is on file.)

Plans are maturing for attendance at the Psychiatric Section of the American Medical Association Annual Meeting in Chicago and the Canadian Medical Association meeting in Toronto, Ontario, near the end of June. An invitation to speak before the Connecticut Society for Mental Hygiene June 3 has been accepted. He will read a paper at the London Conference August 15, 1948.

Correspondence has increased to 246 letters in the last 3 weeks.

Constituent societies have been partially organized to aid the drive against delinquency in the several states.

The following items are called to the attention of the Council:

1. *Home for A.P.A.*—Extensive activities already occurring, with the Medical Director on only half-time basis and the office open only 3 months, indicate the need for more administrative space and personnel, a union of Association activities by consolidation of rentals and space, and a careful search for more means of revenue.

2. *Increased Revenue Needed.*—Organizations comparable to A.P.A. derive their chief revenues, aside from dues, from profit on publications. A careful evaluation of possible changes and additions to the publishing efforts of the Association seems indicated. A study of anticipated increase in membership, and of promotions in the different grades should be made as a guide to the Budget Committee in planning for increased revenues.

3. *The Psychiatric Foundation.*—Its relation to the A.P.A., and the possibilities of its being a source of revenue appear to deserve further study at this time.

4. *Requests.*—Members request various types of services; information of all sorts such as advice and guidance on training plans, factual and statistical information, etc., undergraduates are considering psychiatry as a career, newspapers and magazines, members of other individual specialties on all manner of subjects. Requests for speakers suggest need for a speakers bureau in the large metropolitan areas.

5. *Services to Members.*—Among the services which the Association can render to members at little added cost are: (A) Note of thanks for sending in dues, in addition to annual card of membership. (B) Applicants for membership do

not receive any word until the vote is taken at the Annual Meeting. They get no program in advance, and are charged a registration fee, as any stranger. There is no sense of being welcomed as a new member of the family. This matter has been called to my attention in the last few days and is passed on for the consideration of the Council.

6. *Incoming President.*—It seems the Constitution permits the members to return to their scattered homes without hearing from the incoming President. It would be in line with the desire to reorganize the Association and permit greater activity of committees if the incoming president were requested to announce new committee appointments, his platform, and the points of emphasis in his program on some occasion before the end of the Annual Meeting.

7. *Washington Office.*—The single secretary of the Medical Director is already swamped with work and important matters are falling behind. It seems necessary that the staff be enlarged.

8. *Information Service.*—The great need is for information—for individuals—for legislative campaigns—as a basis for educational drives—and the dissemination of such information to people and places where needed. This was evident in the last 2 national conferences on Health and on Family Welfare, when there was a desperate struggle to get facts together at the last minute. At present, information on mental health and psychiatry exists in many places. It needs to be coordinated, collected, and centralized. In line with contemplated leadership in this field, by the A.P.A., it is appropriate for such a service to be set up in the A.P.A. offices.

9. *News-Letter.*—An equally important step is the matter of getting news to, from, and between the membership. A News-Letter has been considered in the past. It is apparent that any advances the organization is to make will necessitate, as soon as possible, an organ of frequent and rapid communication. Communications of the officers, especially the President, the Medical Director, the Chairmen of Committees, and the exchange of information between various parts of the country will furnish material that should be sent out every 2 weeks. An initial start of once a month seems to be indicated. A plan to pay for this by advertising is being worked out.

10. *Technical Bulletins for Distribution.*—There are available now 2,500 copies each of 6 Veterans Administration Bulletins for free distribution to the members of the A.P.A. These are valuable contributions to the literature.

11. *Membership.*—Recommendations of the Membership Committee suggest the need for a secretary who shall devote herself to this work only. Recruiting for new members, checking of credentials and recommendations, securing applications for advances in grade, when eligible, all these are required for an expanding organization especially since the dues from membership are our principal source of income at this time. Since this is largely a professional matter, it seems appropriate to move the files on membership work to the Washington

Office and conduct the promotion of this phase of our work from that office.

12. *Finances.*—The Budget Committee has been requested to consider the feasibility of appropriating funds for a News-Letter and Information Service, a secretary to the Membership Committee, and a second secretary to assist the Medical Director. It is the sincere belief of your Medical Director that these expenses warrant use of a portion of the reserves that exist in the treasury.

In line with statements made above the following recommendations are respectfully submitted:

1. That the Council approve and direct a search for a suitable building to serve as a "home" for The American Psychiatric Association, to unite its present 2 offices and serve as a focus of its increasing activities.

2. That consideration be given to ways and means of handling the problem of increasing need for revenues and steps taken to survey increasing membership and possibility of expansion of publication and restudy the whole implications of the Psychiatric Foundation.

3. That consideration be given to ways and means of dealing with applications and welcoming new members.

4. That consideration be given for ways and means of promoting the start of the year's business under new officers without delay at the end of the Annual Meeting.

5. That consideration be given to a temporary plan for a Speakers Bureau to be set up, while waiting for appointment of a public relations officer.

6. That the staff of the Medical Director be enlarged to include a director and secretary for the News-Letter and Information Service, a secretary for the Membership Committee, and an additional secretary for the Medical Director starting September 1st. The Budget Committee has been advised of this request.

The Medical Director has been in office such a short time that it appears unfeasible that his report shall, this year, include the report of the Executive Assistant. That is rendered by that office independently.

DANIEL BLAIN, M. D., *Medical Director.*

#### MEMBERSHIP

The following table presents the membership changes during the year 1947-48.

	Honorary	Corresp.	Life	Fellows	Members	Assoc.	Total
Membership 4-1-47 .....	19	18	98	935	2,485	417	3,972
<b>Additions</b>							
Fellow to Life.....	..	..	14	...	...	...	...
Member to Fellow.....	..	..	...	75	...	...	...
Assoc. to Member.....	..	..	...	...	194	...	...
Elected .....	2	2	...	...	356	95	455
Reinstated .....	..	..	...	2	7	1	10
<b>Subtractions</b>							
Fellow to Life.....	..	..	...	14	...	...	...
Member to Fellow.....	..	..	...	...	75	...	...
Assoc. to Member.....	..	..	...	...	...	194	...
Resigned .....	..	..	...	9	23	21	53
Dropped .....	..	..	...	...	7	2	9
Died .....	2	..	2	21	12	3	40
Total Membership 4-1-48.....	19	20	110	968	2,925	293	4,335

#### AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY, INC.

In conformance with the request of The American Psychiatric Association we are submitting the following account of the activities of the American Board of Psychiatry and Neurology, Inc., since the last report to the Association by letter dated April 22, 1947.

The Board consists at present of the following members,

Appointed by The American Psychiatric Association:

Dr. Kenneth E. Appel (term of office expires December, 1950)

Dr. Francis J. Braceland (term of office expires December, 1948)

Dr. George H. Stevenson (term of office expires December, 1949)

Dr. John C. Whitehorn (term of office expires December, 1951)

Appointed by the American Neurological Association:

Dr. Bernard J. Alpers (term of office expires December, 1951)

Dr. Roland P. Mackay (term of office expires December, 1949)

Dr. H. Houston Merritt (term of office expires December, 1950)

Dr. A. R. Vonderahe (term of office expires December, 1948)

Appointed by the Section on Nervous and Mental Diseases of the A.M.A.:

Dr. Spafford Ackerly (term of office expires December, 1949)

- Dr. Percival Bailey (term of office expires December, 1951)  
 Dr. Walter Freeman (term of office expires December, 1948)  
 Dr. Louis J. Karnosh (term of office expires December, 1950)

At the annual meeting of the Board in December, 1947, the following officers were elected:

- Dr. John C. Whitehorn, President  
 Dr. H. Houston Merritt, Vice-President  
 Dr. Francis J. Braceland, Secretary-Treasurer

When the Board met in Philadelphia in May, 1947, the applications of 65 candidates for certification on record were passed upon, and of this number 26 were certified as diplomates of the Board, 30 were requested to appear for examination, and 9 were rejected because they did not meet the requirements of the Board. Although certification on record was withdrawn as of January 1, 1947, these candidates had applied before that date, and the applications had been held until this meeting for final decision.

Following the examination of 310 candidates, the Board certified 152 in psychiatry, 15 in neurology, and 9 in neurology and psychiatry.

In October 1947 a special meeting was held in Chicago for the purpose of enabling candidates who had previously been failed or conditioned to work off their handicaps. Only re-examinations were given at this time. Following the re-examination of 152 candidates, the Board certified 72 in psychiatry, 8 in neurology, and 4 in neurology and psychiatry. One candidate was granted certification on record in psychiatry.

Following the examination of 215 candidates in New York City in December, 1947, the Board certified 109 in psychiatry, 7 in neurology, and 3 in neurology and psychiatry.

Since its inception, the Board has received 3,861 applications. Many of these are still under consideration. The total number of diplomas issued by the Board to date is 2,836. Of this number 1,787 received certification in psychiatry, 179 in neurology, and 870 in neurology and psychiatry.

As of January, 1948, the Board records show the total number of failures as 388 and the total number of candidates conditioned as 361. These figures do not take into account those who have taken re-examinations and subsequently passed, nor is any distinction made for candidates who have been conditioned or failed more than once.

Below is a summary of the financial state of the Board for the year 1947. An audit report is open to inspection in the Executive Offices of the American Board of Psychiatry and Neurology, and will be sent if requested. Unfortunately we do not have enough copies for all concerned.

#### RECEIPTS

Fees .....	\$34,105.00
Interest on Bonds and Savings Account. ....	271.65
Refunds .....	90.19
Total Receipts .....	\$34,466.84

#### DISBURSEMENTS

Office Expenses .....	\$3,843.24
Office Salaries .....	5,632.77
Taxes .....	49.46
Examination Expenses .....	17,369.57
Miscellaneous .....	1,003.52
Total Disbursements .....	\$27,898.56

F. J. BRACELAND, M. D., *Secretary-Treasurer.*

#### COMMITTEE ON COOPERATION WITH LAY GROUPS

This Committee, having just become organized, holds its first conference in Washington in May. Members' suggestions regarding Committee functions:

1. Appoint psychiatrist in each community as advisor to lay organizations and to stimulate interest in psychiatry.
2. Encourage psychiatrists to associate themselves with existing state mental hygiene societies; where there are none, to stimulate interest therein. Determine how many members of A.P.A. belong to local mental hygiene societies. Encourage psychiatrists to participate in Church Councils and local educational and service units; to accept all opportunities for informing the public along sound mental hygiene lines, carefully avoiding unsound theories.
3. Recommend appointment of psychiatrists to local and state health organizations.
4. Work in close liaison with G.A.P. Committee to avoid duplication.
5. We believe that the public awaits leadership of the kind proposed for our Committee, and part of the problem is to educate psychiatrists in each community to accept responsibility for this leadership.
6. The Chairman of this Committee and two members who are also serving on G.A.P. Committee for Cooperation with Lay Groups, attended recent meeting of that Committee with much profit and advantage.

WILLIAM B. TERHUNE, M. D., *Chairman.*

#### COMMITTEE ON ETHICS

The problem of primary consideration has been the medical and psychiatric propriety of certain articles appearing in some of the lay magazines. Representative articles are the following: "Squeal, Nazi, Squeal" (Collier's, August 31, 1946); "New Cure for Mental Illness" (Liberty, August 2, 1947); "Boss Medicine Man" (Saturday Evening Post, October 4, 1947); "He Made Psychiatry Respectable" (Saturday Evening Post, October 18, 1947); "We Can Save the Mentally Sick" (Saturday Evening Post, November 11, 1947); and "We Can Lick Epilepsy" (Saturday Evening Post, January 17, 1948). Your Committee judges that these and similar articles reflect an interest, a need, and a procedure which challenge the medical profession

in all its areas. Inherent advantages and disadvantages are evident according to attitudes and points of view. Constructive implications and interpretations equal their destructive stimulations. Wholesale condemnation of the publicity engendered is not the answer. The professional responsibilities involved transcend the limitations common to your Ethics Committee, and it should not meet this issue alone. Therefore, it is suggested that the Committee on Public Education be invited to assist in setting up criteria as to what magazine articles and publications should contain to be ethical and constructive in terms of therapy and mental hygiene. To effect desirable publicity it also appears advisable to include consultation with advisors borrowed from professional advertising firms and public relations offices. The experience of such advisors should promise much in formulating appeal and popular effect.

Your Committee is unanimously of the opinion that infractions of professional ethics can be dealt with adequately by your Ethics Committee and the officers of the Association only if the qualifications for membership are rigidly met and the advantages of membership in our Association are of unequivocal value. The Association should have a meaningful credo and its "Fellowship obligations" should be signed by all persons accepted for membership. If these obvious requirements can be met, then suspension or cancellation of membership for unethical conduct will have desirable effect.

THOS. J. HELDT, M. D., *Chairman*.

#### COMMITTEE ON INDUSTRIAL PSYCHIATRY

The Committee is concerned over the fact that only a few of the psychiatrists who were engaged in a consulting capacity during the war are continuing their active association with industry at the present time. It is our feeling that this recession of interest calls for the serious consideration of all who recognize the necessity of keeping alive the influence and point of view of psychiatry in industry. The time has come when psychiatrists can no longer remain aloof from social conflicts in the field of labor relations whose outcome depends to such an alarming degree on emotional rather than factual issues.

Psychiatry still has much groundwork to do with respect to educating and gaining the acceptance of management and labor leaders. Far too many industrialists and even some industrial physicians still cling to the traditional belief that psychiatry benefits only the obviously mentally ill, and that it can do relatively little to conserve mental fitness, much less to actually increase the cooperative productivity of people in working groups.

It is the purpose of this Committee to keep actively in touch with all programs relating to the introduction and extension of psychiatry in industry, and to gather specific data as to the clinical, educational, and advisory functions carried on by part-time, full-time, and occasional consultants working in this special field. There is currently great need

for lectures and written summaries indicating what psychiatry has done and can do to increase efficiency, improve interpersonal relationships, reduce accidents, prevent strikes and work stoppages, and guide personnel managers and other progressive industrialists who look to psychiatry for the knowledge and techniques which would bridge the gap between theory and practice in the field of human relations.

LEONARD E. HIMLER, M. D., *Chairman*.

#### COMMITTEE ON INTERNATIONAL RELATIONSHIPS

The Committee has drafted a statement on the psychopathological factors underlying international tensions, which it is planned to distribute generally after approval by Council. The Committee has also cooperated in the planning of the International Congress on Mental Health to be held in London, England, in August 1948. The Committee recommended the participation of the Association in the Congress, and in the World Federation for Mental Health.

GEORGE H. STEVENSON, M. D., *Chairman*.

#### COMMITTEE ON LEGAL ASPECTS OF PSYCHIATRY

Your Committee has continued its long-range attention to the following subjects: (1) uniformity of commitment procedures for the mentally ill, (2) juvenile delinquency and its prevention, (3) the teaching of psychiatry in law colleges, and (4) responsibility of the criminally accused.

It has, in addition, concerned itself with matters of special interest in legislation relating to the control and treatment of sex offenders, a training program for personnel in forensic psychiatry and in the conception of psychopathic personality and its implications for penal psychiatry. Inquiries from sources outside the Committee membership were made relative to civil liberties and drug-induced statements, a plan for narcotic control in Canada and immunity for psychiatrists against suit for malpractice in use of restraint, death, fracture in shock therapy, or in case of suicide.

In this report, special attention is given only to the subject of responsibility of the criminally accused. There is evidence in the various scientific and legal publications of the struggle to adapt the scientific method to the legal framework of criminal proceedings. In instances in which the question of responsibility is raised, it appears that nearly all such efforts reject what is basic in science; namely, that there can be no compromise with truth. It is obvious that so long as the psychiatrist accepts assignment in the rôle of a partisan in the court, whether by implication or actuality, he has compromised his position as a scientist.

The Committee urges acceptance of the plans first presented by us in 1945—that determination of responsibility of the criminally accused be removed from the province of the court. It recommends that the criminal code be modified so that criminal proceedings will be concerned solely with determining whether or not the accused committed



the acts with which they are charged. Having arrived at a judicial decision on this question, the court then can proceed with sentencing, as provided by law. In this way, the criminal court functions as a judicial branch of government and leaves the administrative control of crime to the executive branch of government. The pattern for such a plan is clearly defined and fully described for delinquent and criminal youth in the Model Youth Correction Authority Act prepared by the American Law Institute.

Certain advantages in such a plan will be evident. It makes it possible to apply the scientific method in a field in which it is clearly indicated. It terminates the partisan rôle of the expert witness and avoids the disgraceful spectacle of the so-called "battle of the experts" in court. Presentence examinations with their limitations are obviated.

Necessary examinations require more time than is available in court and should be done in an atmosphere free of partisanship. They should be made by a team trained specially in psychiatry, psychology, and social service which is a regular part of the executive branch of government. This will permit continued study over an extended period of time which is not possible before or during trial.

PAUL L. SCHROEDER, M. D., *Chairman*.

#### COMMITTEE ON MEDICAL EDUCATION

##### I. Premedical Education

Your Committee recommended at the Council meeting, December, 1947, the organization of a two-day round table conference to be held with leading authorities in the mathematical, psychological, sociological, and biological sciences in order to obtain from these leaders definitive plans and content of essential premedical instruction in the social sciences. Many leaders in these disciplines have stressed the relationship of the social sciences to the broader fields of medicine and the changing order, and it is unfortunate that this material has not been organized for utilization in premedical education.

It is recommended that the conference agenda cover the following subjects:

A. The Sciences: mathematics and statistics; the physical sciences; the biological sciences.—*The organic foundations for the study of man.*

B. The Structure of Society: sociology; anthropology; political economy.—*The societal foundations for the study of man.*

C. The Emergence of Personality: dynamic psychology; psychology of learning; experimental psychology.—*The psychological foundations for the study of man.*

D. Man and Culture: the creative and spiritual heritage; the historical heritage; the languages.—*The cultural foundations for the study of man.*

Dr. Murray, chairman of the subcommittee on premedical education, reports progress in preliminary plans for this important conference; and one of the foundations appears interested in giving financial support.

##### II. Undergraduate Medical Education

During the past year the Committee has dealt with routine inquiries from deans and professors of psychiatry concerning further reorganization of undergraduate teaching of psychiatry. These inquiries indicate that the previous studies and reports of this Committee and the recent report of the G.A.P. on medical education have stimulated greater recognition of this important aspect of basic medical education. A great need for more qualified teachers continues. Dynamic points of view appear to be generally accepted and are utilized more in curricular content.

##### III. Graduate Medical Education

Your Committee recommends that the Executive Committee get in touch with the Council of Medical Education and Hospitals of the American Medical Association concerning their plans to resurvey medical schools and training centers. We urgently recommend that well-qualified psychiatrists should serve with the A. M. A. group in this survey. This would enable our Association to formulate flexible standards in developing more satisfactory psychiatric education at both the undergraduate and graduate levels. The opportunity to fuse the interests, principles, and viewpoints of our field of medicine with those of basic medical education through the well-established Council of Medical Education and Hospitals of the A. M. A. and Association of American Medical Colleges offers many possibilities for definitive evaluations of the present status of medical centers and hospitals accepting the responsibility of psychiatric resident training. The creation of a Council on Psychiatric Education and Hospitals of The American Psychiatric Association would facilitate such collaboration with other key medical educational bodies, such as the American Association of Medical Colleges.

##### IV. Postgraduate Psychiatric Education

The Committee was asked to take part (through the obtaining of teachers) in the organization of 3 postgraduate seminars: (1) The Virginia Institute Seminar in Psychiatry and Neurology at Richmond, Va., April 5-16, 1948, under the auspices of the Virginia Department of Mental Hygiene and Hospitals, American Psychiatric Association, Medical Society of Virginia and the U. S. Public Health Service; (2) the second institute to be held in Colorado June 14-28; (3) The South Carolina Institute has already been set up and may be held sometime next fall. Each of these institutes was subsidized by the U. S. Public Health Service, Mental Hygiene Division. The Virginia Institute had a maximum attendance of over 400 physicians and an average attendance of approximately 150. The Colorado Institute (of seminar type) will be conducted mainly as an orientation course for general practitioners, although psychiatrists will not be excluded. The South Carolina Institute, with two weeks of instruction, will meet the needs of the younger men in this region who are completing

their training. Courses will be given in the basic sciences along with daily psychiatric clinics.

#### V. Miscellaneous

It is pleasing to report that after many years of persistent effort the National Board of Medical Examiners are routinely giving one or two questions on psychiatry as a part of their examinations in general medicine. A series of questions has been submitted at the request of this Board by your Committee.

It is recommended that the well-used Atlas on Neuropathology and Syllabus previously prepared through your Committee should now be revised and kept up to date. This will require approximately a \$500 addition to the next budget request of our Committee.

Your Committee again recommends that one session in each annual meeting should be devoted to psychiatric clinics and illustrative teaching methods. This was done the day following the A. P. A. meeting in New York last year and resulted in an excellent and well-attended teaching demonstration at Bellevue Hospital

FRANKLIN G. EBAUGH, *Chairman*.

#### COMMITTEE ON NOMENCLATURE AND STATISTICS

The Committee appreciates the need of a revision of the present classification of mental disorders, but also the necessity for a more prolonged careful study of the whole situation.

While there has been a notable difficulty in obtaining a consensus on details there is a fairly definite concordance on the basic principles involved. In any scientific classification it is wise to avoid being misguided by the fact that general names imply the recognition of classes of things corresponding to them. The naming must not govern the distribution but a natural connecting link should be sought amongst them. The test of the scientific character of a classification is the number and importance of the properties that can be regarded as common to all the items in the group.

An extensive knowledge of the properties or characteristics of objects or items is always necessary to make an efficient grouping. Social values do not constitute a safe basis for any classification of mental disorders as we understand them at present. As in medicine generally, there will always be difficulty in classifying disorders on any other basis than etiology; and there is no other medical discipline where causes and meanings have been so confused as in psychiatry. We have some knowledge of precipitating and perpetuating elements but the basic constitutional causes (using the term "constitutional" in its broad sense) remain undetermined. This is true also of cancer, other neoplastic diseases, and a host of neurological conditions that make for difficulties in nomenclature. Until research reveals the etiological factors there will be discordance in opinions as to where reactions and patterns of response belong in the over-all and long-term picture.

It is possible, if not probable, that many reactions now considered to be entities or self-contained and so classified are merely facets or parts of a more fundamental state that has been placed in a quite different category. More attention to the follow-up of patients studied and treated in our clinics would resolve many of these problems. To date this type of study remains one of the most neglected in our field, yet it would certainly yield the information needed urgently, and which is obtainable in no other way. Until we possess this information some rough arrangement of mental disorders in tentative categories can be made to serve the purposes of those who have practical uses to keep in mind.

Research workers will in all probability continue to define their own fields of reference and name their reaction types as accurately as possible for special study, as no scheme of classification yet proposed will serve such purposes satisfactorily.

The Veterans Administration Technical Bulletin on Nomenclature of Psychiatric Disorders and Reactions was found to contain a number of inadequacies and contradictions requiring correction. In places names and definitions of disorders have been changed or inserted where no actual necessity or new information is indicated to support the change. Here the philosophy of expediency and immediate purpose and any enthusiasms of a temporary nature might be replaced by a thorough scientific evaluation of the problems. It was recommended that the members of the Committee should review again the nomenclature sections on nervous and mental diseases as presented in the "Standard Classified Nomenclature of Disease" and ascertain what modifications are actually indicated to bring it up to date and render it useful for both military and civilian psychiatry.

NOLAN D. C. LEWIS, M.D., *Chairman*.

#### COMMITTEE ON OCCUPATIONAL THERAPY

The Committee has limited itself to an attempt to define its objectives. It has recommended that the name be changed to "Committee on the Adjunctive Therapies" and concern itself with the application of such therapies as the crafts, music, drama, gardening, etc., and educational programs. The Committee might well direct its efforts toward encouraging (1) the use of these therapies in more specific manners, (2) closer correlation with other phases of treatment, (3) the teaching in medical schools of basic principles of such therapies, (4) research directed to more specific prescribing, (5) publication of such studies, and (6) the development of seminar study groups in this field.

R. A. CHITTICK, M.D., *Chairman*.

#### COMMITTEE ON PREVENTIVE PSYCHIATRY

Your Committee has held two meetings during the year and all the committee members have been alert and availed themselves of opportunities of making contacts as designated at the regular meetings, which would promote interest in the program of preventive psychiatry in outstanding schools of

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public health, as well as securing the necessary funds to support such a plan.

There was no lack of interest manifested in several medical educational centers with applied schools of public health, in the proposed plan for establishing preventive psychiatry as an integral part of a public health program. The Committee finally decided that the School of Public Health at Harvard University provided the facilities, interest, and the cooperation essential to the pioneer work which the program implied. Full cooperation was assured from the School of Public Health and the Department of Psychiatry, and the Deans of the Boston University School of Medicine and the Tufts College Medical School expressed a keen desire to have their undergraduate students participate in any courses that might be developed in this field. Contact was also made with the heads of departments of the allied schools of the social sciences, and there was every reason to believe that we could expect their full cooperation. Opportunity for the essential contacts with industry, state institutions, and the heads of state departments interested in a variety of social problems, as well as community groups, will contribute to the success of a program of preventive psychiatry.

Responsibility of securing the necessary funds—approximately \$20,000 a year for a 5-year period—was also turned over to the Committee on Preventive Psychiatry. We have met with certain difficulties as might be expected. However, in a recent conference with Dr. Hugh R. Leavell, Professor of Public Health Practice at the School of Public Health, Harvard University, he reported that he had reason to believe that a sum of money sufficient to carry out a program in preventive psychiatry under the direction of the School of Public Health will be forthcoming from one of the Foundations, and that such a program will be started in the near future.

Your Committee looks upon the integration of preventive psychiatry in the field of public health closely associated with outstanding medical centers as one of the most important contributions that can be made in the field of psychiatry.

DOUGLAS A. THOM, *Chairman.*

#### PROGRAM COMMITTEE

Because of the shift in the location of the annual meeting to Washington, D. C., and because there are to be only 3½ days for scientific meetings, the Program Committee, at its meeting in New York in December, 1947, had to eliminate many worthwhile papers. All but one member were present to help in the selection of papers.

Another "Theoretical" symposium is to be given under supervision of Dr. Ewen Cameron and Dr. H. Brosin. Dr. M. Kenworthy is arranging for the Social Service program and Dr. D. Blain has responsibility for the Veterans Administration meeting.

Some misunderstanding continues to exist concerning the rôle of Section officers in arranging for their Section programs. They work with the Pro-

gram Committee, but the Program Committee has final responsibility. Unless there be central authority, some authors will be reading 2 or 3 papers in different section meetings, thus excluding others from the program.

Because of paper shortages, possible and actual printers' strikes, etc., it is necessary to have abstracts available at least 6 months before the annual meeting. The Program Committee has its meeting usually in December to make final plans for the following year's program. This should be borne in mind by those wishing to be on the 1949 program.

FRANK J. CURRAN, M. D., *Chairman.*

#### COMMITTEE ON PSYCHIATRIC NURSING

At a meeting of the Advisory Committee, December 13, 1947, attended by Drs. Ruggles, Barrett, and Chambers, it was agreed to make application to the U. S. Public Health Service for funds under the terms of the National Health Act. A reply has not been received to date.

The Committee agreed to the advisability of time studies in order to establish reliable standards as to the numbers of nurses and attendants required for proper functioning under different hospital conditions.

One hundred and two affiliate schools are operating; 58 of these are approved by the Association, others are receiving consideration. All accredited schools are checked each year, either by personal visit or by means of questionnaire. Graduate courses in mental hospitals are not popular now because of the high incidence of employment. Several universities continue to offer degree courses in psychiatric nursing. The number of students is insufficient to supply the demand for executives and instructors. Nurses should be encouraged to apply for U.S.P.H.S. subsidies for instruction in such university courses, and hospitals located near such universities should encourage nurses to enroll while on the job.

Most hospitals continue to have difficulty in filling their quotas. Improved working conditions, higher salaries, and opportunities for education and advancement might alleviate the condition. Every effort should be made to create a better understanding between nurse and physician in order to obtain better teamwork. The following recommendations are offered:

1. The nursing department in mental hospitals should be a single unit headed by a well-qualified nurse responsible directly to the superintendent.

2. The nursing personnel should be classified and assigned to grades according to their qualifications. Both duties and qualifications should be clearly defined. Such a classification, defining duties and qualifications, has been set up by your Committee.

Every large hospital should have a well-organized school for attendants which should be accredited by The American Psychiatric Association. Graduates should be eligible to take the examinations given by the licensing authorities in those states



having such laws. Working conditions should be improved and wages increased to a point that will attract a better type of employee, in turn permitting the establishment of still higher qualifications and thus aid in the elimination of poorly qualified personnel.

All sections of Canada and the United States have now been visited by our Nursing Consultant. The courtesy extended to her everywhere speaks for itself and indicates that hospital officials are interested in obtaining the services offered by our Committee and in increasing the efficiency of their nursing service.

The Chairman wishes to express his appreciation for the cooperation of the Council, and his thanks to the members of the Advisory Committee and the Committee on Psychiatric Nursing for their support and counsel.

RALPH M. CHAMBERS, M. D., *Chairman*.

#### COMMITTEE ON PSYCHIATRIC STANDARDS AND POLICIES

In 1945 the Association approved and published the Committee's report on minimum standards for mental hospitals and outpatient clinics, and at the last annual meeting established a special Board of Inspection and Rating of the mental hospitals.

The Council in its December 1947 meeting adopted the following recommendations:

1. Complete separation of the acutely mentally ill and the convalescing cases from the chronically ill.
2. Public provision for adequate funds for the care of acute and convalescing patients, on a basis of a minimum of \$5.50 per diem per capita.
3. Inclusion of mental illness in the policies of "Health Insurance" on the same basis as any other illness.
4. The provision of adequate funds for the care of the chronically ill patients on the basis of a minimum of \$2.50 per diem per capita.
5. The eradication of the obsolete buildings and their replacement by modern buildings within the next 10 years.
6. Investment of 10% of the annual budget of each hospital for research work.
7. Information to the public that it is impossible to remedy the existing conditions within a short time, since it will take at least 10 years to provide the necessary number of trained personnel.

The President, as authorized by the Council, appointed the following Fellows of the Association to constitute the Central Inspection Board: Doctors Kenneth E. Appel, Joseph E. Barrett, Leo H. Bartemeier, F. Fremont Bateman, Karl M. Bowman, C. Charles Burlingame, Leslie B. Hohman, Winfred Overholser, Thomas A. C. Rennie, Mesrop A. Tarumian.

The Committee will fully cooperate with the Central Inspection Board in all respects of the new project. The Central Inspection Board will forward to the Committee the results of its fact-finding procedures. These data should enable the Committee to achieve a systematic evolution of stand-

ards and definitions to be incorporated into the official standards.

The Committee requests the Council to authorize the newly appointed Board to proceed with its duties without delay, and to begin the inspection and rating service as formulated by the Association.

The Committee has completed the final draft of the form for inspection and rating of mental hospitals and the same is filed with the Committee's full report.

M. A. TARUMIANZ, M. D., *Chairman*.

#### COMMITTEE ON PUBLIC EDUCATION

A review of the development and functions of the Committee on Public Education, together with recommendations on present and future public relations efforts, is presented to implement this work of the Association, be it entirely through funds and services donated by individual members as in the past, or with the additional help of a paid public relations staff.

*The Function of the Committee.*—Since the Association considers it unprofessional to engage in "selling psychiatry" or "selling ourselves as individuals," the work of this Committee has been conservative and confined to combatting propaganda. We recommend adherence to conservatism, with activities limited to helping other groups who may properly further the cause of psychiatry.

*A Credo for the Association.*—This Committee has asked for many years for an official pronouncement of the aims and purposes of the Association, to include the points on which the members agree and which they wish to have publicized. We recommend that a committee be formed to take action in formulating such a basic credo.

*Our Relationship with Allied Organizations.*—The Association's relationship with allied organizations should be predetermined to the end of the most effective use of all organizations. We recommend that a joint group be formed between this Committee and any appropriate organizations whose goals are directed toward mental health, and ask permission to gain such affiliations.

*National Policies Carried Out on a Decentralized Basis.*—Emphasizing the need for decentralizing public education efforts, this Committee, with permission of the Council, appointed district and state representatives of our Committee. We have refrained from strengthening this program pending the decision as to the future of this Committee. We recommend that the Committee national policies be carried out through state representatives who will be provided from the central office with source material and will activate our policies through the aid of the state and local medical and social societies.

*Interlocking of Association Activities.*—To round out any public education program, there must be a mutual exchange of all Committees' activities. Although, theoretically, monthly or quarterly reports of the Committees' work are to be placed at our disposal, some more effective machinery needs to be established. We recommend that the Chairman

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of this Committee be made an ex-officio member of all standing Committees, that the Chairmen of the standing Committees be made ex-officio members of this Committee, and that the Chairman of this Committee be invited to attend meetings of the Council and the Executive Committee.

*Our Program Must be Affirmative, With Us in the Role of Adviser, Not Censor.*—No agency of public information is disposed to operate at the direction of psychiatry, but they are disposed to act in the best interests of the public. We believe that, by helping the agencies make their public offering the best possible, an amiable relationship between psychiatry and the agencies has been achieved. We recommend that continuing the policy of quiet infiltration and neutralization, making qualified advice available, seems to constitute the most effectual approach.

*The Use of an Individual Member's Name.*—This Committee and many members of the Association have felt hampered by the lack of any policy governing ethical participation in such matters as acting as consultant to the film industry, to radio, or any public agency. We recommend that the formulation of the policy to govern a member's activities as to the use of his name in connection with radio and commercial advising in psychiatric matters falls within the province of organized medicine as implemented by state or county medical societies, subject to action of the Committee on Ethics of The American Psychiatric Association.

*A Full-Time Public Relations Setup.*—Discussing the pros and cons of a full-time paid public relations setup, the Committee points out the expense involved. If the Association has funds available, we should have a full-time setup, but if no funds are available, the Committee recommends continuing to activate volunteer efforts. Specifically, the Committee on Public Education asks, if a paid public relations department is to be set up, what are the resources available, and what will be the relationship, function, and responsibilities of this Committee?

*Conclusions.*—This Committee appeals for the opportunity to meet with the Executive Committee within one month if possible in order that action on our recommendations can be taken and practical implementation of those approved be commenced.

THE COMMITTEE ON PUBLIC EDUCATION.

#### COMMITTEE ON PUBLIC HEALTH

During the year the Committee has directed its attention toward a review of the extension of psychiatric thinking into the field of public health as demonstrated by current activities.

This abstract is limited to a brief enumeration of psychiatric activities in the public health field in a narrow sense—not to include the broader aspects of mental health in the total health picture.

*(A) Schools of Public Health.*—The Harvard University School of Public Health, University of Minnesota School of Public Health, and Johns Hopkins School of Hygiene and Public Health

have special basic programs dealing with mental hygiene. The Johns Hopkins School basic program has been augmented by prophylactical clinical work and specialized training aspects.

*(B) Federal.*—The U.S.P.H.S. has had a basic Division of Mental Hygiene since 1930. More recently the program has been markedly improved and expanded in its service to the state through implementations of the National Mental Health Act. Its newer aspects include assistance to various agencies in research, training, and community services.

*(C) States.*—Several of the states appear to have active Divisions of Mental Hygiene as an integral part of their Public Health Departments. Some of these are (1) Connecticut, (2) Maine, (3) Maryland, (4) Mississippi, (5) New Jersey, (6) Oregon, (7) Washington, (8) Wisconsin.

Some states—particularly Illinois, Colorado, Georgia, Idaho, Kentucky, Nebraska, North Carolina, and Tennessee—now appear to be struggling to find trained personnel in order to develop mental hygiene programs or to rebuild those which, of necessity, were curtailed in recent years.

*(D) Cities.*—Likewise, some cities have inaugurated active mental hygiene activities within their local health departments. Especially is this so in Baltimore, Chicago, and New York, where community prophylactical work is stressed.

*(E) Association of State and Territorial Health Officers.*—This Association has taken a renewed and active interest in mental health programs in the various states and territories. It has established a Committee on Mental Health, and it is to be hoped that the efforts of that Committee will be coordinated with the work of the Committee on Public Health of The American Psychiatric Association.

CLIFTON T. PERKINS, M. D., *Chairman.*

#### COMMITTEE ON REORGANIZATION

At the meeting of the Council, December 14, 1947, the Chairman and three other members of your Committee attended and asked approval by the Council of the steps taken by the Committee thus far, consisting chiefly of an attempt to diagram and implement a restructuring of our Association on the basis of: (a) a wider and more representative democratic participation in administration by the members, and (b) the separation of policy making and legislative functions on the one hand, and executive and operative functions on the other, by setting up two administrative bodies.

This involved the formation of a House of Delegates or General Assembly, to be composed of members elected from various districts and/or societies, subspecialties, etc. It was explained to the Council that the details of districting and other such matters were as yet far from complete. The Council was told of the outstanding services of Dr. Maeder to this Committee and to our Association.

The Council approved the general program, made various suggestions, and instructed the Committee to proceed.

The Council was then informed of our nomination for the post of Medical Advisor. The Council considered favorably the suggestion to defer attempting to nominate a Public Relations or Public Education man until the Medical Advisor had been appointed and had accepted, because it was felt that much depended upon the harmonious cooperation of these two employees, and that the selection of the Public Relations Officer should be concurred in by the Medical Advisor.

On December 16 at the Hotel Lombardy in New York your Committee held a most stimulating and important meeting. Dr. Morris Fishbein of the A.M.A. was present and took a great interest in our problem, approved of many of the steps already taken, suggested many additional steps and pointed out numerous fields for special study. He drew upon his vast experience in the American Medical Association and in many of its subsidiary and affiliated organizations for information highly pertinent and valuable to us.

On February 7 in Chicago at the Tavern Club, another meeting was held at which Dr. Fishbein was present with us again and the following items were discussed:

1. A general review of the *revised reorganization chart*, presented by Dr. Maeder.

2. A tentative draft of a *revised constitution and by-laws* for the Association, presented by Dr. Ratliff.

3. *The geographic districting and representation*, presented by Drs. Noyes, Bond, and Felix.

Subcommittees were appointed for assigned tasks to be discussed at a meeting in March.

A final meeting of the Committee for the fiscal year 1947-1948 was held at the Statler Hotel in Washington, D. C., March 16, 1948. It was attended by most of the members of the Committee, and for a part of the time by President Overholser, President-elect William Menninger, Executive Assistant Austin Davies, Executive Committee member Dr. Thomas Rennie, and Medical Director, Daniel Blain.

The final revision of the constitution constituted the major project. The entire constitution, as revised in the light of the Chicago meeting of the Committee was read line by line by Dr. Ratliff. This was followed by contributions from Drs. Farrell, Cameron, Noyes, Maeder, and others.

Each revision was carefully considered and many corrections made. The revised manuscript is to be submitted to all members of the Committee by mail and a final form delivered to the Council by May 1.

The Committee now and herewith submits to the Council the draft of the constitution and by-laws, the proposed districting plan, a chart of the organization, and a very tentative budget.

The Committee feels that the Constitution should be submitted with the necessary parliamentary action with the idea of receiving final consideration after the necessary changes in details at the 1949 annual meeting.

The Committee was unanimously of the opinion that the new constitution should not go into full

effect until at least two-thirds of the proposed constituent societies shall have ratified it and that ratification must be based upon the vote of the majority of the qualified members within each constituent society.

KARL A. MENNINGER, M. D., *Chairman.*

#### COMMITTEE ON VETERANS

1. In the past year great progress has been made by the Veterans Administration in improving the quality of psychiatric care of hospitalized veterans. More active treatment programs have been reflected in increased discharge rates. A forward step has been the development of neuropsychiatric sections in general medical and surgery hospitals and general medical and surgery units in neuropsychiatric hospitals. Efforts to prevent the establishment of new hospitals in isolated areas were fairly successful.

2. As of January 1948, 37 VA regional office mental hygiene clinics, 53 contract clinics, and 5 clinics in VA hospitals were available for outpatient treatment for veterans with service-connected neuropsychiatric disabilities. These facilities, however, were able to take care of only a small fraction of those needing treatment. Shortage of personnel has been the most important single factor in preventing a more rapid expansion of clinic facilities.

3. Twenty-nine residency training programs in psychiatry and neurology were in operation as of January 1948, with a total of 406 residents. Forty-seven VA hospitals and clinics and 41 medical schools were participating in this program.

4. Research funds were made available to 11 neuropsychiatric installations in the VA and approximately \$250,000 was provided by the VA for research contracts in psychiatry and neurology with outside agencies.

5. The training program for clinical psychologists was established in May 1946. In September 1947, 464 individuals were in training in 36 universities. Two hundred and five full-time and 13 part-time clinical psychologists are now employed by the VA, and 67 consultants have been aiding in the program.

6. The army nomenclature of psychiatry disorders was modified somewhat and adopted by the VA.

7. Many difficulties, mostly administrative, still exist. There is uncertainty about the budget from year to year. From time to time funds are exhausted and the hiring of greatly needed personnel, essential travel, and the services of consultants are drastically curtailed. The Department of Medicine and Surgery does not have full control of its own funds and it is possible for funds which were earmarked for medical use to be used by other departments. Morale of personnel and recruiting suffer as a result of uncertainty about budgetary cuts by Congress from year to year. The Department of Medicine and Surgery is given the responsibility of running the hospitals, but it is not given enough authority to carry out its responsibilities. There is no direct channel of communication between hospital managers and the Chief Medical

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Director. The total program is in lay control (Deputy Administrators) rather than under medical control. The present load of patients is too big in relation to the number of doctors, nurses, and attendants to ensure adequate treatment to all. There has been too great a tendency for communities to pass on to the Veterans Administration responsibility for the treatment of all veterans and they have been supported in this by veterans pressure groups. If the VA is to do an effective job with

present facilities and personnel it will have to be relieved of the responsibility for the nonservice-connected cases.

8. A resolution (see May 1949 issue of the JOURNAL, p. 865) was presented to the Council on May 19, 1948, approved by Council, and personally presented to Mr. Carl Gray, the Administrator on Veterans Affairs, by Dr. Overholser, President of The American Psychiatric Association.

NORMAN Q. BRILL, M. D., *Chairman.*

## CORRESPONDENCE

### CAROTID SINUS IN NEUROPSYCHIATRIC CASES

Editor, AMERICAN JOURNAL OF PSYCHIATRY:

SIR: In a paper entitled "The Carotid Sinus in Neuropsychiatric Cases," by Drs. Milton Greenblatt, Max Rinkel, and Harry C. Solomon, in the AMERICAN JOURNAL OF PSYCHIATRY, March 1949, page 673, the authors arrive at the conclusion that "the central effects of carotid sinus compression described above are thought to be due largely to interference with the carotid circulation to the brain." This conclusion is essentially correct for the work described, but unfortunately it leaves the reader with the impression that the central effects of carotid sinus stimulation are generally of this origin. Strictly speaking what the authors are describing are the central effects of carotid artery occlusion. When this occlusion was applied in the region of carotid sinus, it is not surprising that carotid sinus reflex effects (cardiac asystole) should also be obtained. However, the design of the experiment was such that it was impossible to demonstrate the cerebral effects of carotid sinus stimulation, because the effects were preceded or prevented by the effects of carotid artery occlusion. If one examines the protocol, it is evident that time of onset of the electroencephalographic slowing, the loss of consciousness, and convulsions occur at exactly the time that one would predict the effects of carotid artery occlusion, namely, 8-10 seconds after the arterial circulation to the brain had been significantly reduced. The authors demonstrate clearly that these central effects are ascribable to carotid artery occlusion since they occur upon compression both at the level of the sinuses and at the level of the bifurcations. If the authors had used the proper technique of stimulation, which avoids occlusion of the artery, and if they had read more carefully the publications to which they refer (references 10, 11, 12, 13, to which might be added Engel, G. L., "Mechanisms of Fainting," *Journal of the Mount Sinai Hospital*, 12: 170, 1945), they would have found that the appearance of electroencephalographic slowing and symptoms are dependent upon the length of the

cardiac asystole and the position of the patient. In the recumbent position, cardiac standstill of at least 8-10 seconds is necessary to provoke symptoms. This represents the average time that the brain may be largely deprived of its circulation before disturbance in consciousness is evoked. In the sitting or standing positions similar effects occur with cardiac asystole of as little as 5 seconds since gravity adds to and prolongs the resultant fall in blood pressure.

If this cardio-inhibitory effect is blocked by atropine and care is taken to avoid occluding the carotid artery during stimulation, the depressor and cerebral types of response may be elicited, if present. The cerebral effect is best demonstrated in the recumbent position, but one must be careful to differentiate this response from the effect of occlusion of the artery and from hysterical syncope. The former may be tested by occluding the artery below the sinus, the latter by stimulating the neck at some area distant from the artery or sinus (reference 12). With a true cerebral carotid sinus response, the EEG always shows slowing if symptoms are provoked (see reference 11). The depressor response is best demonstrated in the erect position, in which the fall in blood pressure is more marked and sustained than in the recumbent position. However, loss of consciousness and EEG changes will only occur if the systolic pressure falls below 70 m.m. of Hg. and remains at this level for 10 seconds or more. In other words, the effects are again dependent on the degree of cerebral ischemia.

The authors advocate a technique of brisk, bilateral pressure in the sitting position. Such a technique is not without risk, particularly in elderly individuals, and is not to be condoned. Several accidents have been reported in the literature (J. Marmor and M. R. Saperstein, "Bilateral Thrombosis of Anterior Cerebral Artery Following Stimulation of a Hyperactive Carotid Sinus," *J.A.M.A.*, 117: 1089, 1941, and J. M. Askey, "Hemiplegia Following Carotid Sinus Stimulation," *Am. Heart J.*, 31: 131, 1948).

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The fact that the authors limit the period of stimulation to 10 seconds perhaps accounts for the good fortune in avoiding accidents.

The most important point which we wish to make in this communication is that EEG slowing results from carotid sinus reflex activity whenever a significant disturbance in cerebral circulation is so provoked, whether it be asystole, fall in blood pressure, or local reflex cerebral vasospasm. The determining

factor will be that the reduction in cerebral circulation exceed the minimum tolerance of the brain for oxygen lack. These effects must be clearly distinguished from the effects of carotid artery occlusion.

GEORGE L. ENGEL, M. D.,  
Department of Psychiatry  
and Medicine,  
University of Rochester  
School of Medicine.

#### REPLY TO THE FOREGOING

Editor, AMERICAN JOURNAL OF PSYCHIATRY:

SIR: We appreciate the comments submitted by Dr. George Engel.

To quote Dr. Engel, "The authors demonstrate clearly that these central effects are ascribable to carotid artery occlusion since they occur upon compression both at the level of the sinuses and at the level of the bifurcations."

Concerning "the proper technique of stimulation which avoids occlusion of the artery," it should be pointed out that the carotid sinus reflexes in question depend on stimulation of nerve ends within the carotid sinus which are presso-receptive. The carotid sinus reflex is a stretch reflex which can best be elicited by sharp, brisk compression of the sinuses. The "proper technique" definitely varies among different workers but most adhere to the technique described by Soma Weiss which clearly uses brisk, forceful, sustained compression of the carotid sinuses against the spinal column. We would also call attention to the fact that we used several varieties of technique, none of which succeeded in eliciting reflex central syncopal or convulsive attacks. A true demonstration of the central *reflexes* syncopal effect would require first that the cardio depressor and vaso depressor mechanism were negated; second, that no circulatory embarrassment

be induced by the carotid sinus pressure; and third, that vasospasm in the cerebral area be demonstrated. As the discussor has indicated, one must always be alert to hysterical syncope and other atypical forms of disturbance of consciousness which are not at all dependent upon reflexes or, for that matter, occlusion.

In well over 100 cases, with literally thousands of carotid stimulations and a variety of methods of stimulation, we were unable to convince ourselves of a true cerebral *reflex* syncope.

Concerning the accidents which have been reported in the literature: we were well aware of these observations; fortunately we have not had any untoward phenomena. It is possible that we avoided accidents by regulating the duration of pressure in terms of the cardiac effects. If cardiac block occurred, pressure was immediately released at the signal from an operator who watched the electrocardiogram. Another safety feature might have been the brief duration of compression (usually 10 seconds) in contrast to 4-40 seconds used by other authors. Finally, the long arm of chance may have operated in the accidents quoted by Engel, and a kindly providence in our own experiments.

MILTON GREENBLATT, M. D.,  
Boston Psychopathic Hospital.

#### ERROR AND APOLOGY

Editor, AMERICAN JOURNAL OF PSYCHIATRY:

SIR: On pages two and three of the April Newsletter of the Committee for the Preservation of Medical Standards in Psychiatry appears a quotation from a newspaper which is in error. The phrase, "legitimate *feat* of Russia," should have read "legitimate *fear* of Russia." This changes the whole meaning of the paragraph. I am glad to be able to correct this error, and to make it known to the readers of this periodical.

ROBERT B. MCGRAW, M. D., *Temporary Chairman.*

## COMMENT

### NEWSPAPER CRUSADES

In Florida the *Miami Herald* has recently published a series of short articles criticizing the care of mental patients at the state hospital, and suggesting larger appropriations in order to improve that care. There was no criticism of personnel, who were praised for doing all possible with the means given them, but the legislature was criticized for its niggardliness.

The *Baltimore Sun* inaugurated a campaign of criticism of state institutions which is much more complicated and has taken on a different character. Howard Norton (a Pulitzer Prize winner) wrote a series of articles in which he carefully refrained from saying anything of a favorable nature (as was his privately announced intention). His description of conditions of filth, lack of care, etc., gave a great stimulus to ready letter writers who expressed to the editor their horror of the "snake pits." There were few, if any, comments from those who knew of real conditions, except a letter to the editor by a disinterested psychiatrist in which Mr. Norton's unfair attitude was criticized. This was published with deletions of parts which explained how difficult it may be to keep some patients clean and properly clothed.

A judge of Baltimore County appointed a group to investigate and bring in a report. Governor Lane had already engaged a form of hospital consultants to make a report but as yet this has not been published.

The Maryland Psychiatric Society appointed a group of five of its members to investigate and their report was one of the first to be published. This was most critical of Rosewood State School and Crownsville Hospital (for Negroes), and less so of Spring Grove Hospital and Springfield Hospital.

It is generally admitted that all these institutions have been hampered by overcrowding, lack of physicians and other personnel, and many recommendations by their superintendents for improvements have been ignored by boards of estimates and others. Dr. Weltmer, of Spring Grove, has shown that

before he may employ any one, five different boards have to give approval. Naturally this hampers his acquisition of personnel.

It is of interest, perhaps, that the report of the Psychiatric Society group was signed by all five members of its committee, was most critical of Rosewood School, yet but one of them had ever visited it, and he had always complimented the staff on the work done there. It would seem that some one was expressing animus. This impression was strengthened by a headline in *The Sun*: "Rosewood Shamed by the Work of Other Training Schools," a comparison being made (with diagrams) of conditions at Letchworth Village and The Wayne County School in Michigan. Those who read the article beyond the headline learned that types of patients in these schools varied considerably so that comparisons could not be made fairly, also that the writer praised the work being done at Rosewood, and that it had little or nothing to be ashamed of.

The Baltimore County committee's report was more fair and its members could not find the patients lying in their filth described by Mr. Norton and quoted by the ready letter writers.

Dr. Flower of Worcester State Hospital inspected Spring Grove Hospital and his verdict was that all was being done for patients that was possible under the circumstances of overcrowding and lack of personnel.

A committee from the legislature, headed by State Senator P. G. Stromberg, made a report and, while pointing out deficiencies, did so in a fair and unbiased way. Their recommendations were substantially those contained in a bill passed by the State Senate March 22d, and later by the House of Delegates as follows:

1. Abolition of the Board of Mental Hygiene.
2. Creation of a new Mental Hygiene Board under a single commissioner.
3. Termination of the tenure of the present Commissioner of Mental Hygiene and

superintendents of all the individual mental hospitals on June 1.

4. Creation of a new Mental Hygiene Advisory Board.

5. Creation of a new Mental Hygiene Board of Review.

6. Abolition of the Boards of Managers of all the five state mental institutions.

7. Creation of two new divisions in the office of the commissioner of mental hygiene to supervise business affairs of the hospitals and professional and educational activities.

An appropriation of \$20,000,000.00 is included in the supplemental budget to implement these bills and bring Maryland's mental hospitals up to the physical standards set by the United States Department of Public Health.

It seems doubtful if the above steps are the most wise ones and it is possible that threatened resignations of personnel may occur, leaving conditions more deplorable than they are at present.

W. R. D.

### PSYCHIATRY IN PUBLIC HEALTH

Public health officers of recent years have been concerned with individual service to certain categories of the sick and with teaching health principles, as well as with the control of environmental dangers. In his work with individuals the successful public health worker is one who is understanding and encouraging rather than coercive. The importance to him of training in the basic principles of human relationships should be recognized. A promising development along these lines is reported from California. An institute on psychiatry in public health was held at Berkeley in July 1948, sponsored by the Commonwealth Fund and the state department of health, and described in the 1948 annual report of the Fund briefly as follows.

The 27 students who attended the institute were all public health administrators, mostly city and county health officers. The teachers were 8 psychiatrists, 3 pediatricians with psychiatric training (chosen with the potentialities of the well-child conference in mind), and 5 public health leaders to serve as interpreters and referees. In addition, there were observers from the U. S. Public Health Service, the U. S. Children's Bureau, and the Oregon State Health Department.

Through lectures, clinical work, and discussions these public health officers learned of human needs and motivations which play a part in successful treatment. The lectures presented psychiatric theory, such as the developmental history of the personality, the nature of anxiety, the problem of authority. The clinical work took place in the regular

clinics of the health departments of Berkeley, Oakland, and Richmond, where the psychiatrists demonstrated the effectiveness of their point of view in leisurely interviews with typical patients; the students themselves conducted some of the interviews.

Then in small groups made up of 6 students and 3 instructors each, "and in various combinations of these groups, clinics and lectures were vigorously discussed, and the students brought up a great array of questions growing out of their own experience. Some of these questions they answered themselves; some neither they nor the instructors could answer; but they gained insight from the context in which the questions were asked, and from the warmth of feeling which made the asking possible. By the end of two weeks the psychiatrists and the public health men had merged into one group which had a new feeling about public health. No conclusions were formulated, but the drift of the discussion seemed to indicate agreement that respect for the human personality and some understanding of it, some feeling for people as individuals, can make everything a health department does for people more effective; that the health department, dealing with people in critical periods of their lives—childbearing, early infancy, chronic disease—has a superb opportunity to foster their mental health and so to render a truly 'preventive' service; that the health department shares with the whole community responsibility to provide facilities for the treatment of mental disorder (and generally speaking this should not be

its first order of business in the mental health field); and that if a health department is fortunate enough to employ a well-qualified psychiatrist or psychiatric social worker it is better to use him in training its own staff for their everyday jobs than in treating the mentally ill."

A detailed report of this institute has been published by the Commonwealth Fund, written by Geddes Smith, and entitled, "Human Relationships in Public Health." It is available in quantity for free distribution by health departments, schools of public health nursing, and other health agencies.

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## NEWS AND NOTES

**MEDICAL DEPARTMENTS, ARMED FORCES.**—Because of a critical professional manpower shortage the Armed Forces are asking for volunteers to replace the physicians and dentists—nearly a third of the present staff—whose tours of duty are now expiring. By the end of July the shortage will number about 1,600 physicians and 1,160 dentists. A direct appeal is being made to the 8,000 men who were trained at government expense under the wartime Army Specialized Training Program and the Navy V-12 program, and who have given little or no service to the Armed Forces, to volunteer for active duty in one of the three Armed Services.

**CONGRESS OF FRENCH PSYCHIATRISTS AND NEUROLOGISTS.**—The 47th meeting of this Congress will be held at Clermont-Ferrand, Sept. 12-18, 1949, under the presidency of Dr. Tournay. Three major topics for discussion will be: (1) the reactive psychoses (Dr. Chatagnon); (2) the consequences of occipital lobe surgery (Dr. Marcel David); (3) medicolegal psychiatry (Dr. Gouriou).

The general secretary of the Congress is Dr. Paul Cossa, 29, Bd. Victor Hugo, Nice.

**EMOTIONAL PROBLEMS OF DISABLED CHILDREN.**—The New York State Association for Crippled Children announces a 5-year program for intensive study of the emotional problems of disabled children. This large-scale fact-finding and treatment project will be carried out at the Children's Hospital in Buffalo, N. Y. Approximately 180 children with severe disabling conditions will be studied the first year.

Dr. Mitchell I. Rubin, professor of pediatrics at the University of Buffalo and chief of the department of pediatrics at Children's Hospital, will head the staff of trained specialists who will carry out the project.

**RESIDENCY AT ALBANY HOSPITAL.**—An assistant residency in neurology and psychiatry will be available July 1, 1949 at the

Albany Hospital, Albany, N. Y. The service is under the direction of Dr. S. Eugene Barrera and is associated with the Albany Medical College. For information write to Dr. Barrera.

**AMERICAN NEUROLOGICAL ASSOCIATION.**—The annual meeting of the American Neurological Association will be held in Atlantic City, N. J., on June 13, 14, 15, 1949, with headquarters at Chalfonte-Haddon Hall.

Dr. Stanley Cobb is president of the Association and Dr. H. Houston Merritt, 710 W. 168th St., New York City, is secretary.

**MARYLAND POSTGRADUATE PSYCHIATRIC INSTITUTE.**—Under the auspices of the Maryland Association of Private Practicing Psychiatrists and the Maryland State Department of Health, Division of Mental Hygiene, a postgraduate psychiatric institute will be held in Baltimore, June 6, 7, and 8, 1949.

The Institute is being planned for practicing physicians of the State of Maryland except psychiatrists. Attendance will be limited to 35. The content of the program will be directed toward helping the practicing physician to expand his psychiatric knowledge. It will include short didactic lectures with case presentations and a discussion which will include participation of the students.

There will be a registration fee of \$2.00. Applications will be accepted in the order in which they are received. They should be sent to Dr. J. G. N. Cushing, chairman of the planning committee, at 2411 N. Charles St., Baltimore 11, Md.

**RESIDENCIES IN NEUROLOGY.**—Three appointments to residencies in neurology are available at Winter VA Hospital, Topeka, Kansas. The hospital has been accredited by the A.M.A. for two years of residency training in neurology. Residency training is also conducted in internal medicine and psy-

chiatry, and a residency program in neurosurgery has been applied for.

The number of neurologic admissions per year is approximately 400, and the average number of neurologic patients on the Service is 75. Residents in neurology have the opportunity for clinical assignments in neurosurgery and psychiatry. Applications should be sent to the Director of Professional Education, Winter VA Hospital, Topeka, Kansas.

**GERONTOLOGY AND GERIATRICS.**—Dr. Robert W. Kleemeier, professor of psychology at Northwestern University, has been appointed director of the newly established laboratory for gerontology and geriatrics at Moosehaven, Florida, the city for the aged maintained and operated by the Loyal Order of Moose fraternity for the past 25 years. The appointment becomes effective Sept. 15, 1949.

The members of the National Advisory Council for Research at Moosehaven are: Dr. Anton J. Carlson, professor emeritus of physiology, University of Chicago, chairman; Dr. Ernst P. Boas, New York City

(internal medicine); Dr. Ernest W. Burgess, University of Chicago (sociology); Dr. George Lawton, New York City (gerontology); Dr. S. L. Pressey, Ohio State University (psychology of aging); Dr. Lowell S. Selling, Orlando, Florida (mental hygiene); Dr. N. W. Shock, U.S.P.H.S. (gerontology); Mr. Louis J. Haas, New York Hospital, Westchester Division (occupational therapy); and Dr. Martin L. Reymert, director, The Mooseheart Laboratory for Child Research (psychology), who is charged with the supervision of all research activities for the Moose fraternity.

**AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY.**—The Board announces a special examination to be held in October at a place to be announced. This examination is in addition to the regular semi-annual examinations held in May and December. Applications for this examination must be in the Secretary's office no later than July 15, 1949. All requests for re-examination should be in the Secretary's hands no later than the same date.

HISTORICAL

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## BOOK REVIEWS

**HISTOPATHOLOGY OF THE PERIPHERAL AND CENTRAL NERVOUS SYSTEM.** By *George B. Hassin, M.D.*  
Third Edition. (Chicago: Published by the author, 1948.)

The third edition of Dr. Hassin's textbook of neuropathology deserves an enthusiastic reception. The author is the dean of neuropathology in this country and he has condensed the results of his long years of experience into this volume. The general form of the book has not changed from previous editions. It is divided into five sections. The first short section, called "General Considerations," deals with the structures which make up the nervous system. Diseases of the peripheral nerves, spinal cord, and brain are considered in the next three parts. The final section is devoted to staining methods. Like most texts, this one tends to grow with each edition and the present version includes 612 pages. The scope has been enlarged and now covers an unusual range of topics for a book of this type. A few chapters have been added and a large number have been rewritten. The text is succinct and adequate. The great number of excellent illustrations deserves special comment. Also the section on staining is of great practical value.

Some difficulties arise from the arrangement of material. The sharp separation of diseases of the spinal cord and brain leaves no logical place for consideration of generalized diseases of the central nervous system. Moreover, Dr. Hassin has certain theories concerning neuropathology which are not widely accepted. Thus he discounts the rôle of the choroid plexus in the formation of spinal fluid. These views are not overemphasized in his book but are presented with a certain amount of supportive evidence.

The volume is an authoritative statement by an investigator who has had great personal experience with the diseases in question. It stimulates thought and consideration. I congratulate the author and strongly recommend the book to those interested in neuropathology.

O. R. LANGWORTHY, M.D.,  
Henry Phipps Psychiatric Clinic,  
Baltimore, Md.

**BRIEF PSYCHOTHERAPY.** By *Bertrand S. Frohman, M.D.* (Philadelphia: Lea and Febiger, 1948.)

Dr. Frohman has written this book for physicians who are not psychiatrically trained with the purpose of providing them with a readable, non-technical, medium-sized exposition of psychiatry and psychosomatic medicine. The title "Brief Psychotherapy" is slightly misleading since only 75 pages are devoted to therapy. The first 147 pages are devoted to descriptions of psychiatric conditions, psychodynamic theory, and diagnostic classifications of the psychoneuroses. In the opinion of

this reviewer the section on therapy is considerably superior to the preceding two-thirds of the book, and is the only part of the book psychiatrists would be interested in reading. Nonpsychiatrists, however, might find the first part interesting and useful. Dr. Walter C. Alvarez of the Mayo Clinic has written a very enthusiastic and interesting foreword.

Dr. Frohman, who practices in Beverly Hills, California, is not identified as to hospital connections and society memberships. I do not find his name in the psychiatric, psychoanalytic, or American Board of Psychiatry rosters. On the jacket he is said to have had 10 years' experience in general practice and 15 years' experience in clinical psychotherapy. In the bibliography he is listed as author of 5 papers on psychiatric topics and as translator of 2 papers of Wilhelm Stekel, all published in the early thirties. In the text he identifies himself as an eclectic in psychotherapy who uses Stekel's "active analysis" on selected cases, and "active psychotherapy, general semantics, hypnotherapy, and narcosynthesis on other cases. There is also a short section on electroshock for psychoneurotics. Electroshock is recommended for confused, depressed, disoriented, borderline patients and those not amenable to psychotherapy. Throughout the book the author, while crediting Freud with fundamental discoveries, repeatedly states or implies that Freudian psychoanalysis is too lengthy, inflexible in its techniques, too expensive, and unnecessary. The author, however, refers to himself as "the analyst" in many of the 100 short case reports.

In the first two-thirds of the book devoted to psychiatric exposition the author deviates frequently from accepted classifications and terminology, and introduces a number of new labels and interpretations of defense mechanisms. For example, the psychoneuroses are tested under 5 major classifications: anxiety neurosis, conversion hysteria, phobias, compulsion neurosis, and obsessional neurosis. Many phobias are listed under anxiety neurosis, and anxiety hysteria is not mentioned. The description of conversion hysteria is inadequate, and, in general, the psychoneuroses are presented descriptively rather than dynamically. "Neurotic mechanisms" are subdivided into defense mechanisms, escape mechanisms, and conditioned mechanisms. Identification (one of the author's conditioned mechanisms) is presented as a wholly pathological mechanism—quite at variance with the usual connotation of this term, which is ordinarily used to denote a psychic process which can be healthy and, in fact, essential in personality development. The author gives his own division of stages of psychosexual development as "infantilism," "the first transient heterosexual phase," "the first transient homosexual phase," and "the ideal permanent heterosexual state," and indicates in the section on therapy that he often explains these 4

stages to patients. In the section on psychosomatic conditions he lists conditions which come to the attention of urologists, endocrinologists, surgeons and gynecologists, and pediatricians, curiously omitting the *internists* who frequently tell us what large percentages of their patients have functional illnesses.

The section on therapy (psychotherapy, except for the paragraph on electroshock) is much more readable and contains some well-presented cases of brief psychotherapy. The author urges active handling of all cases and criticizes the passive, time-consuming techniques of "orthodox psychoanalysis." He apparently assumes that all Freudian analysts use only passive techniques on all cases, and thus feels justified in attacking frequently the so-called orthodox methods. The Stekelian active analysis is presented as being far superior.

Dr. Frohman is impressed by the usefulness of the therapeutic applications of general semantics and gives a fairly good summary of this field. Hypnotherapy is discussed quite inadequately and apparently in ignorance of the recent work of Gill, Brenman, Wolberg, Erickson, Lindner, and others.

The entire book is well organized, readably written, and especially in the psychotherapy case presentations laudably avoids technical words and jargon. The psychotherapy section is recommended to psychiatrists as containing a brief, well-presented thesis of Stekelian analysis and a limited discussion of active techniques in brief psychotherapy. Space does not permit adequate discussions of the author's declaration that he avoids transference neurosis in all cases by active handling and by early explanations of what patient attitudes are realistic and what are not. There is a very uneven bibliographical list, and a fairly good glossary of psychiatric terms.

ROBERT P. KNIGHT, M.D.,  
Stockbridge, Mass.

THE INNER WORLD OF MAN. By Frances G. Wickes.  
(New York: Henry Holt & Co., 1948.)

The author of this book, a disciple of Dr. C. G. Jung, is described on the jacket as a practicing analytical psychologist. When first published in 1939, Jung wrote to the author, "I have read it from cover to cover. It is really very good, and the choice of examples is excellent. I think it is the most recommendable introduction to Analytical Psychology which I ever saw." One of the Book Clubs called the work "more absorbing than the most vivid novel." And the New York Times said it was "a hoard of treasures: dramas of the spirit, subtle interpretations, moral parables, mellow judgments."

All this seems to leave little more for the present reviewer to say. His chief interest, frankly, is in the 79 illustrations (35 of them beautifully reproduced in color), which are described as "psychological drawings and paintings."

The text adheres to the Jungian line, with chapters on the "Persona" (the favorable facade presented to the outer world), the "Shadow" (the dark, unpleasant obverse of the Persona), the "Anima" (the managerial female image in the male

unconscious), and the "Animus" (the controlling male image in the female unconscious). These last two opposing principles are universal and of course quite unknown to their hosts. That is what makes them so troublesome—and so interesting. As would be expected, the book is full of dreams, visions, and phantasies, which the author discusses with subtlety and literary charm. Many of these have the dramatic quality of fairy tales and of ancient mythologies. The capacity for experiencing visions and phantasy play, potential in everyone, seems remarkably enhanced under Mrs. Wickes' guidance, and it is not surprising that the emerging revelations all fit into her general system.

As this is not a medical book, case histories in the clinical sense are not provided, and there is no very clear indication of the nature of the author's cases or the outcome. She speaks of her courses with clients as lasting several years; one case had been under care for three years. She introduces her subjects to the "collective unconscious" and stimulates the pictorial representation of their own inner experiences, which she explains to them according to the Jungian doctrine. The visions are likely to be accompanied by violent emotional reactions, and the resulting pictures include the whole gamut of Jungian images and symbols. Here are terrifying monsters, the tree of life, plumed serpents, the Rosicrucian rose, the Logos or male principle, the Terrible Mother (in the form of an octopus)—in fact, all "the great images of the collective unconscious" together with those from the personal unconscious. One youth drew a series of pictures representing phases of his mother's "Animus." There is even a picture of the "Shadow" which is reminiscent of Chagall.

The symbolic procession of these pictures, often executed with considerable artistic skill, might successfully compete with any of the surrealist or surrealist exhibitions currently popular in the galleries. One thing especially can be said for them: they include none of the horrors that have been so much admired of late in art exhibitions and that occasionally, as recently in Chicago ("Cyclops"), take first prizes. As one becomes acclimatized among the pictures in this book, one feels quite at home in the company of the writer of the Book of Revelation and of St. Anthony in his desert hermitage and of Blake and Dante in their extraterrestrial and intraterrestrial wanderings.

Abstract and "modern" artists sometimes declare that they cannot explain their pictures, which is perhaps to their credit. Here, however, the paintings and drawings all have the advantage of elaborate explanations through which the dreamers and visionaries are led to come to terms with themselves.

To the student of Jung, "The Inner World of Man" will prove rewarding; for others too it will provide an exciting excursion along the bypaths of human imagination. The pictures by themselves with or without the textual exegesis form an intriguing gallery, offering as they do generous glimpses of the gorgeous canvas of Jungian mythology.

C. B. F.



## ANNUAL INDEX

This periodical is indexed alphabetically under both Subject and Author entries.

In searching for a specific article the Author entry should be consulted if the name of the author is known, since the complete bibliographical reference is to be found after the author's name only. When there are two or more authors for an article the complete entry appears only under the name of the first author. Under the name of each of the joint authors a cross reference is made to the original author entry.

The titles under the subject entries are often inverted or shortened, and the name of only one author per article is shown if there are more than two. For the complete author reference the Author Index should be consulted. The Subject Index covers original articles, biographic material, book reviews, obituaries, editorial comments, and news items.

R. indicates a book review; the title of the book is followed by the author's name and is also listed by author under Book Reviews. Ed. indicates an editorial comment or news item. P.P. indicates comment which appeared in a President's Page. Memorial notices appear under the heading Obituaries and under the names of individuals.

Entries concerning all meetings of scientific bodies will be listed under Association and Group Meetings.

## SUBJECT INDEX

### A

- AAAS Centennial (Ed.), 152, Aug. '48.
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- Age: See Geriatrics.
- Alcohol:
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  - Certifications, New York City (Dec. 1948), 709, Mar. '49.
  - Certifications, San Francisco (Oct. 1948), 471, Dec. '48.
  - Certifications, Washington (May 1948), 155, Aug. '48.
  - Qualifications in Child Psychiatry, 314, Oct. '48.
  - Special Examination Announced, 942, June '49.
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  - Dr. Oberndorf Joins Editorial Board (Ed.), 71, July '48.
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  - Committee on Cooperation with Lay Groups (Ed.), 153, Aug. '48.
  - Constitution and By-Laws, 132, Aug. '48.
  - Contributions to the 1949 Program (Ed.), 153, Aug. '48.
  - Council Meetings, November, 1948 (P.P.), 548, Jan. '49.
  - Election of Officers; D. Ewen Cameron (Corresp.), 869, May '49.
  - Function of Standing Committees (P.P.), 68, July '48; 148, Aug. '48.
  - Membership (P.P.), 625, Feb. '49.
  - Montreal Meeting (P.P.), 870, May '49.
  - Position of Medical Director (P.P.), 786, Apr. '49.
  - Proceedings of 104th Annual Meeting, 851, May '49; 920, June '49.
  - Proposed New Constitution and By-Laws, 135, Aug. '48.
  - Rating and Inspection Service for Psychiatric Hospitals (Ed.), 391, Nov. '48.

- Recent Deaths among Fellows (Ed.), 469, Dec. '48.
- Reorganization Plan (P.P.), 306, Oct. '48; 704, Mar. '49.
- Report on the Information Service; R. L. Robinson and L. Freeman, 710, Mar. '49.
- Report of Nominating Committee, 794, Apr. '49.
- Report on Washington Meeting (Ed.), 149, Aug. '48.
- Scientific Exhibits at 1949 Meeting (Notice), 549, Jan. '49.
- Ancillary and Related Services (Ed.), 550, Jan. '49.
- Anthropology:
- Childhood and Development among the Wind River Shoshone*; D. B. Shimkin (R.), 877, May '49.
- Cowrie Shell Miao of Kweichow*; M. P. Mickey (R.), 239, Sept. '48.
- Personality in Nature, Society, Culture*; C. Kluckhohn and H. A. Murray, eds. (R.), 714, Mar. '49.
- Antivivisection Meddling (Ed.), 876, May '49.
- Army: *See* Military Psychiatry, Rehabilitation, V.A.
- Art:
- Inner World of Man*; F. G. Wickes, 944, June '49.
- Studies of the "Free Art" Expression of Behavior Problem Children*; M. Naumberg (R.), 76, July '48.
- Association and Group Meetings:
- AAAS Centennial, 152, Aug. '48.
- American College of Physicians, 154, Aug. '48.
- American Neurological Association, 941, June '49.
- American Occupational Therapy Association, 155, Aug. '48; 552, Jan. '49; 629, Feb. '49.
- American Orthopsychiatric Association, 708, Mar. '49.
- American Psychopathological Association, 876, May '49.
- American Psychosomatic Society, 792, Apr. '49.
- American Society of Electroencephalography, 792, Apr. '49.
- Arkansas VA Hospital, Neuropsychiatric Meeting, 794, Apr. '49.
- Association for Physical and Mental Rehabilitation, 633, Feb. '49.
- Conference on Science, Philosophy, and Religion, 394, Nov. '48.
- Congress of French Psychiatrists and Neurologists, 941, June '49.
- International Congress of Criminology, 629, Feb. '49.
- International Congress on Mental Health, 72, July '48; 232, Sept. '48; 554, Jan. '49.
- International Congress of Psychiatry, 629, Feb. '49.
- International Congress on Psychosurgery, 467, Dec. '48; 550, Jan. '49.
- National Committee for Mental Hygiene, 39th Annual Meeting, 232, Sept. '48; 554, Jan. '49.
- Southern Psychiatric Association, 630, Feb. '49.
- Symposium on Feelings and Emotions, Second International, 233, Sept. '48.
- Third National Conference on Psychodrama, Sociodrama, Sociometry, and Group Psychotherapy, 153, Aug. '48.
- Western Institute on Epilepsy, 876, May '49.
- Western State Psychiatric Institute, 793, Apr. '49.
- Atomic Energy in Medicine; J. Z. Bowers, 321, Nov. '48.
- Attitude Therapy in Mental Hospital; E. C. Adams, 456, Dec. '48.
- Autobiographies of Patients: *These Are My Sisters*; L. Jefferson (R.), 635, Feb. '49.
- Awards: *See* Grants.
- B
- Behavior Disorders, Psychology of: A Biosocial Interpretation*; N. Cameron (R.), 236, Sept. '48.
- Behavior Reactions, Psychotic, Proposed Classification of; P. Wittman and W. Sheldon, 124, Aug. '48.
- Berman, Dr. Harold H., Directs Willowbrook State School (Ed.), 793, Apr. '49.
- Bernays Award for Intergroup Relations Research (Ed.), 633, Feb. '49.
- Biochemistry:
- Biochemical Research in Psychiatry (Ed.), 308, Oct. '48.
- Cephalin-Cholesterol Flocculation Test in Schizophrenia; F. H. Zimmerman et al., 225, Sept. '48.
- Comparative Lymphocytic and Biochemical Responses in Schizophrenia and Affective Disorders to Electroshock, Insulin Shock, and Epinephrine; E. H. Parsons et al., 573, Feb. '49.
- Effect of ECT on Water Metabolism in Psychotic Patients; M. D. Altschule and K. J. Tillotson, 829, May '49.
- Influence of ECT on Blood Sugar, Leucocytes, and Lymphocytes; K. Stern et al., 585, Feb. '49.
- Lymphocytes in Psychoneuroses; H. C. Shands and J. E. Finesinger, 277, Oct. '48.
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- Biographical Sketch:
- Overholser, Winfred, M. D., Sc. D.; M. Moore, 10, July '48.
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- Bioluminescence*; E. N. Harvey et al. (R.), 798, Apr. '49.
- Bonhoeffer, Professor (Corresp.), 624, Feb. '49.
- Book Reviews:
- Abrahamsen, Daniel; *Men, Mind, and Power*, 879, May '49.
- Amatruda, Catherine S.: *See* Gesell, Arnold, jt. auth.
- Arnheim, Rudolph, et al.: *Poets at Work*, 157, Aug. '48.
- Bailey, Percival: *See* Reese, Hans H., jt. auth.
- Banay, Ralph S.; *Youth in Despair*, 399, Nov. '48.
- Bartley, S. Howard; *Fatigue and Impairment in Man*, 237, Sept. '48.

- Beach, Frank A.; *Hormones and Behavior*, 638, Feb. '49.
- Berg, Charles; *Deep Analysis: Clinical Analysis of an Individual Case*, 319, Oct. '48.
- Berg, Irwin A.: *See* Pennington, L. A., jt. auth.
- Bernheim, H.; *Suggestive Therapeutics*, 800, Apr. '49.
- Bibby, Cyril; *How Life Is Handed On*, 475, Dec. '48.
- Bluemel, C. S.; *War, Politics, and Insanity*, 556, Jan. '49.
- Bordeaux, Jean: *See* LeCron, Leslie M., jt. auth.
- Bowlby, John; *Forty-Four Juvenile Thieves*, 879, May '49.
- Burton, Arthur, and Harris, Robert E., eds.; *Case Histories in Clinical and Abnormal Psychology*, 636, Feb. '49.
- Bustamente, José Angel; *Las Enfermedades Mentales en Cuba*, 476, Dec. '48.
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- Cameron, Norman; *Psychology of Behavior Disorders: A Biosocial Interpretation*, 236, Sept. '48.
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- Caspari-Rosen, Beate: *See* Rosen, George, jt. auth.
- Cossa, Paul; *Du Reflexe au Psychique*, 556, Jan. '49.
- De Ajuriaguerra, J.: *See* Ey, H., jt. auth.
- Deane, Frank; *Doctor of Magic*, 236, Sept. '48.
- Ebaugh, Franklin G.: *See* Strecker, Edward A., jt. auth.
- Ehrenwald, Jan; *Telepathy and Medical Psychology*, 398, Nov. '48.
- Elledge, Caroline H.; *Rehabilitation of the Patient*, 637, Feb. '49.
- Estabrooks, G. H.; *Spiritism*, 717, Mar. '49.
- Ewalt, Jack R.: *See* Strecker, Edward A., jt. auth.
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- Fenichel, Otto; *Psychoanalytic Theory of Neurosis*, 716, Mar. '49.
- Frohman, Bertrand S.; *Brief Psychotherapy*, 943, June '49.
- Garcia, J. Alves; *Psicanalise e Psiquiatria*, 238, Sept. '48.
- Gemelli, Agostino, and Zunini, Giorgio; *Introduzione alla Psicologia*, 477, Dec. '48.
- Gesell, Arnold, and Amatruda, Catherine S.; *Developmental Diagnosis*, 316, Oct. '48.
- Gilbert, G. M.; *Nuremberg Diary*, 235, Sept. '48.
- Groves, Ernest R., and Groves, Gladys H.; *Contemporary American Family*, 316, Oct. '48.
- Guttmacher, Alan F.; *Story of Human Birth*, 160, Aug. '48.
- Halliday, James L.; *Psychosocial Medicine: A Study of the Sick Society*, 397, Nov. '48.
- Halstead, Ward C.; *Brain and Intelligence*, 473, Dec. '48.
- Harris, Robert E.: *See* Burton, Arthur, jt. auth.
- Harvey, E. Newton, et al.; *Bioluminescence*, 798, Apr. '49.
- Harvin, Emily; *The Stubborn Wood*, 400, Nov. '48.
- Hassin, George B.; *Histopathology of the Peripheral and Central Nervous Systems*, 943, June '49.
- Hecaen, H.: *See* Ey, H., jt. auth.
- Herrick, C. Judson; *Brain of the Tiger Salamander*, 157, Aug. '48.
- Hinsie, Leland E.; *Understandable Psychiatry*, 799, Apr. '49.
- Hoch, P. H.: *See* Kalinowski, L. B., jt. auth.
- Holmes, Gordon; *Introduction to Clinical Neurology*, 315, Oct. '48.
- Jefferson, Lara; *These Are My Sisters*, 635, Feb. '49.
- Jersild, Arthur T.; *Child Psychology*, 878, May '49.
- Joad, C. E. M.; *How Our Minds Work*, 76, July '48.
- Kalinowski, L. B., and Hoch, P. H.; *Shock Treatments and Other Somatic Procedures in Psychiatry*, 159, Aug. '48.
- Karpman, Ben; *Case Studies in Psychopathology of Crime*, 75, July '48.
- Kelley, Douglas M.; *22 Cells in Nuremberg*, 159, Aug. '48.
- Kessler, Henry H.; *Rehabilitation of the Physically Handicapped*, 158, Aug. '48.
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- Kluckhohn, Clyde, and Murray, Henry A.; *Personality in Nature, Society, and Culture*, 714, Mar. '49.
- Kornmüller, A. E.; *Einführung in die Klinische Elektrenkephalographie*, 795, Apr. '49.
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- LeCron, Leslie M., and Bordeaux, Jean; *Hypnotism Today*, 77, July '48.
- Levinsohn, Samuel A., ed.; *Symposium on Medical Problems*, 476, Dec. '48.
- Levy, David; *New Fields of Psychiatry*, 476, Dec. '48.
- Lewis, Nolan D. C.: *See* Reese, Hans H., jt. auth.
- Lindesmith, Alfred R.; *Opiate Addiction*, 74, July '48.
- Linebarger, Paul M. A.; *Psychological Warfare*, 797, Apr. '49.
- Llopis, Bartolome; *La Psicosis Pelagrosa*, 473, Dec. '48.
- Long Island College of Medicine; *Bringing Modern Medicine to the People*, 715, Mar. '49.
- Lovell, Robert G.; *Taking the Cure*, 556, Jan. '49.
- Marks, Robert W.; *Story of Hypnotism*, 78, July '48.
- Masten, Mabel: *See* Reese, Hans H., jt. auth.
- McIntyre, A. R.; *Curare*, 317, Oct. '48.
- Mendel, Alfred O.; *Personality in Handwriting: A Handbook of American Graphology*, 238, Sept. '48.

- Menninger, William C.; *Psychiatry: Its Evolution and Present Status*, 397, Nov. '48.
- Meredith, Florence L.; *Hygiene*, 879, May '49.
- Merrill, Maud A.; *Problems of Child Delinquency*, 714, Mar. '49.
- Merritt, H. Houston, Mettler, Fred A., and Putnam, Tracy J.; *Fundamentals of Clinical Neurology*, 716, Mar. '49.
- Mettler, Cecelia C. and Fred A.; *History of Medicine*, 638, Feb. '49.
- Mettler, Fred A.: *See* Merritt, H. Houston, jt. auth.
- Mettler, Fred A.; *Neuroanatomy*, 477, Dec. '48.
- Mickey, Margaret P.; *The Cowrie Shell Miao of Kweichow*, 239, Sept. '48.
- Mons, W.; *Principles and Practice of the Rorschach Personality Test*, 556, Jan. '49.
- Moreno, J. L.; *Psychodrama*, 235, Sept. '48.
- Moreno, J. L.; *Theatre of Spontaneity*, 237, Sept. '48.
- Muench, George A.; *Evaluation of Nondirective Psychotherapy*, 75, July '48.
- Muncie, Wendell; *Psychobiology and Psychiatry: Textbook of Normal and Abnormal Human Behavior*, 239, Sept. '48.
- Murray, Henry A.: *See* Kluckhohn, Clyde, jt. auth.
- Naumberg, Margaret; *Studies of "Free" Art Expression of Behavior Problem Children and Adolescents as a Means of Diagnosis and Therapy*, 76, July '48.
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- Rosen, George, and Caspari-Rosen, Beate; *400 Years of a Doctor's Life*, 557, Jan. '49.
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- Schaffner, Bertram; *Father Land*, 798, Apr. '49.
- Schweitzer, Albert; *Psychiatric Study of Jesus*, 880, May '49.
- Selling, Lowell S.; *Synopsis of Neuropsychiatry*, 634, Feb. '49.
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- Sibley, Elbridge; *Recruitment, Selection, and Training of Social Scientists*, 797, Apr. '49.
- Strecker, Edward A., Ebaugh, Franklin G., and Ewalt, Jack R.; *Practical Clinical Psychiatry*, 877, May '49.
- Tomkins, Silvan S.; *The Thematic Apperception Test: Theory and Technique of Interpretation*, 157, Aug. '48.
- Vischer, A. L.; *Old Age: Its Compensations and Rewards*, 478, Dec. '48.
- Wickes, Frances G.; *The Inner World of Man*, 944, June '49.
- Woodward, Luther E.: *See* Rennie, Thomas A. C., jt. auth.
- Zunini, Giorgio; *Animali e Uoma Visti da uno Psicologo*, 637, Feb. '49.
- Zunini, Giorgio: *See* Gemelli, Agostino, jt. auth.
- Braceland, Dr. Francis J., *Appointment to Forrestal Committee (Ed.)*, 874, May '49.
- Brain and Intelligence*; W. C. Halstead (R.), 473, Dec. '48.
- Brain Injury, Psychotic Reactions in the Late Recovery Period following*; J. A. Aita and R. M. Reitan, 161, Sept. '48.
- Brain Tumors in Mental Hospital Patients*; S. Levin, 897, June '49.
- Brief Stimulus Therapy. Physiological and Clinical Observations*; W. T. Liberson, 28, July '48.
- Brill, Dr. A. A., *Commemoration of (Ed.)*, 72, July '48.
- Brill, Abraham Arden, 1874-1948 (O.), 79, July '48.
- British Training Courses, Industrial Psychiatry (Ed.)*, 73, July '48.
- Bronx Society of Neurology and Psychiatry (Ed.)*, 155, Aug. '48.
- Brooklyn Psychiatric Society (Ed.)*, 792, Apr. '49.
- Brucellosis, Chronic, Impaired Cerebral Functions in*; N. S. Apter et al., 361, Nov. '48.
- Brussel, Dr. James A., *Wins Literary Prize (Ed.)*, 233, Sept. '48.
- Burlingame, Dr. C. C., *Receives French Decorations (Ed.)*, 631, Feb. '49.
- Burlingame, Dr. C. C., *Visits India (Ed.)*, 708, Mar. '49.

## C

- Canadian Health Program (Ed.)*, 552, Jan. '49.
- Cancer Patient and His Mental Attitude*; B. J. Ficarra, 304, Oct. '48.
- Carbon-Dioxide Narcosis Therapy*; J. A. Kindwall, 682, Mar. '49.
- Cerebral Palsy Training Program (Ed.)*, 633, Feb. '49.
- Chapman, Ross McClure, 1881-1948 (O.), 718, Mar. '49.
- Child Life Research, Clearing House on, Established in Children's Bureau (Ed.)*, 470, Dec. '48.
- Child Psychiatry*:  
*Bellevue Training Program in Child Psychiatry (Ed.)*, 708, Mar. '49.  
*Emotional Problems of Disabled Children (Ed.)*, 941, June '49.



- Genesis of Hostility in Children; L. Bender, 241, Oct. '48.
- Intake Interview in Psychiatric Treatment in Children's Cases; J. V. Coleman et al., 183, Sept. '48.
- International Council for Mental Health of Children (Ed.), 230, Sept. '48.
- New Child Guidance Clinic in New Jersey (Ed.), 313, Oct. '48.
- Psychoanalytic Contribution to Treatment of Children's Behavior Problems; S. Lorand, 357, Nov. '48.
- Reactions of Children to a Highly Publicized Crime against a Child; S. S. Sloman, 779, Apr. '49.
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- Rhythmic Patterns in Childhood; R. S. Lourie, 653, Mar. '49.
- Second International Symposium on Feelings and Emotions (Ed.), 233, Sept. '48.
- Studies of the "Free" Art Expression of Behavior Problem Children and Adolescents as a Means of Diagnosis and Therapy*; M. Naumberg (R.), 76, July '48.
- China, Psychiatry in (Ed.), 70, July '48.
- Clinical Psychiatry: Review of Psychiatric Progress, 1948, Symp.; N. D. C. Lewis, 512, Jan. '49.
- Cobb, Dr. Stanley, Salmon Lecturer (Ed.), 631, Feb. '49.
- College Mental Hygiene Literature (Ed.), 552, Jan. '48.
- Commonwealth Fund (Ed.) 874, May '49.
- Community Mental Health Program, Psychiatric Nurse in; P. Shalit, 377, Nov. '48.
- Concentration Camp Psychology; P. Friedman, 601, Feb. '49.
- Convulsive Shock Therapy: *See* Shock Therapy.
- Coramine-Electroshock Therapy in Treatment of Psychotic Excitement; H. D. Fabing, 435, Dec. '48.
- Correspondence:
- Anslinger, H. J., 131, Aug. '48.
- Bonhoeffer, Karl, 624, Feb. '49.
- Cameron, D. Ewen, 869, May '49.
- Engel, George L., 936, June '49.
- Greenblatt, Milton, 937, June '49.
- Kalinowski, Lothar B., and Scarff, John E.; 387, Nov. '48.
- Malamud, N., 703, Mar. '49.
- McGraw, Robert B., 937, June '49.
- Robins, S. A., 387, Nov. '48.
- Suarez-Murias, Edward L., 702, Mar. '49.
- Crime and Delinquency:
- Case Studies in the Psychopathology of Crime*; B. Karpman (R.), 75, July '48.
- Commitments in Illinois under Criminal Sexual Psychopath Law; W. H. Haines et al., 420, Dec. '48.
- Forty-Four Juvenile Thieves: Their Characters and Home Life*; J. Bowlby (R.), 879, May '49.
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- Youth in Despair*; R. S. Banay (R.), 399, Nov. '48.
- Crippled Children, Emotional Problems of (Ed.), 941, June '49.
- Cuba, Las Enfermedades Mentales en*; J. A. Bustamante (R.), 476, Dec. '48.
- Curare*; A. R. McIntyre (R.), 317, Oct. '48.
- D
- Developmental Diagnosis*; A. Gesell and C. S. Amatruda (R.), 316, Oct. '48.
- Diagnosis: Proposed Classification of Psychotic Behavior Reactions; P. Wittman and W. Sheldon, 124, Aug. '48.
- Doctor of Magic*; F. Deane (R.), 236, Sept. '48.
- Drug Addiction:
- Addiction Liability of Methadon (Amidone, Dolophine, 10820) and Use in Treatment of Morphine Abstinence Syndrome; H. Isbell and V. H. Vogel, 909, June '49.
- Morphine Addiction, Neurophysiologic Basis of; A. Wikler, 329, Nov. '48.
- Dynamic Mechanisms Underlying Some Forms of Cerebral Dysfunction; S. Brock, 246, Oct. '48.
- E
- Education, Mental Hygiene in (Review of Psychiatric Progress, 1948, Symp.); W. C. Ryan, 510, Jan. '49.
- Electroencephalography:
- Carotid Sinus in Neuropsychiatric Cases; M. Greenblatt et al., 673, Mar. '49. *See also* Corresp., 936, 937, June '49.
- Changes in EEG Resulting from Shock Therapy; M. A. Kennard and M. D. Willner, 40, July '48.
- EEG in Cases with Cortical Atrophy and Ventricular Dilatation; S. Levin and M. Greenblatt, 220, Sept. '48.
- EEG in Postencephalitic Behavior Disorder and Parkinsonism; S. Levin, 439, Dec. '48.
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- Electroshock Therapy: *See* Shock Therapy.
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- England, Public Mental Hospitals in; D. Pratt, 485, Jan. '49.

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- Current Evaluation of Anticonvulsant Drugs; R. N. DeJong, 767, Apr. '49.  
 Mesantoin Poisoning in Treatment of Epilepsy (Ed.), 471, Dec. '48.  
 Mesantoin Therapy; J. L. Fetterman and V. M. Victoroff, 410, Dec. '48.  
 Review of Psychiatric Progress, 1948, Symp.; C. W. Watson, 524, Jan. '49.  
 Vocational Rehabilitation in Texas; J. L. Otto, 417, Dec. '48.  
 Examination, Psychiatric, Evaluation of; O. Diethelm, 606, Feb. '49.  
 Excerpta Medica (Ed.), 233, Sept. '48.  
 Extramural Medical Care and National Resources; P. R. Hawley, 481, Jan. '49.

## F

- Facilitation and Inhibition as Factors in Behavioral Deviations; D. E. Cameron, 693, Mar. '49.  
 Family:  
   *Contemporary American Family*; E. R. and G. H. Groves (R.), 316, Oct. '48.  
   Groves Conference on (Ed.), 72, July '48.  
 Fatalities:  
   Following Subshock Doses of Insulin; E. L. Suarez-Murias (Corresp.), 702, Mar. '49. *See also* Reply; N. Malamud, 703, Mar. '49.  
   Resulting from Treatment with Subshock Doses of Insulin; N. Malamud, 373, Nov. '48.  
   *Father Land*; B. Schaffner (R.), 798, Apr. '49.  
   *Fatigue and Impairment in Man*; S. H. Bartley (R.), 237, Sept. '48.  
 Fellowships: *See also* Psychiatric Education.  
   American College of Physicians, Research Fellowships (Ed.), 154, Aug. '48.  
   Psychometric Fellowships (Ed.), 553, Jan. '49.  
 Fernald, Walter E., State School, Centenary (Ed.), 228, Sept. '48.  
 Fernald, Walter E., State School, Courses at (Ed.), 394, Nov. '48.  
 Films:  
   Educational Film on Cerebral Palsy (Ed.), 396, Nov. '48.  
   Psychiatric Films (Ed.), 874, May '49.  
 Flight from Insight; A. B. Wheelis, 915, June '49.  
 Forbes, Prof. Alexander, Honored (Ed.), 792, Apr. '49.  
 Forel, Auguste, Centenary (Ed.), 471, Dec. '48.  
 Forensic Psychiatry: *See also* Legislation.  
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   *Symposium on Medicolegal Problems*; S. A. Levinsohn, ed. (R.), 476, Dec. '48.

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- General Hospital, Psychiatry in; B. L. Keyes et al., 90, Aug. '48.  
 General Paresis, Penicillin Therapy; G. D. Weickhardt, 63, July '48.  
 General Semantics (Ed.), 872, May, '49; 1949 Courses (Ed.), 875, May '49.

Genetics: *See* Heredity.

- George Washington University Hospital (Ed.), 73, July '48.

## Geriatrics:

- Early Senile Dementia in Mongoloid Idiocy; George A. Jervis, 102, Aug. '48.  
 Gerontology and Geriatrics Laboratory at Moosehaven (Ed.), 942, June '49.  
*Old Age: Its Compensations and Rewards*; A. L. Vischer (R.), 478, Dec. '48.  
 Presenile Psychosis: Report of Two Cases with Brain Biopsy Studies; P. Polatin et al., 96, Aug. '48.  
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 German Psychiatry, Current Trends; K. Schneider, 689, Mar. '49.  
 Germany: *Father Land*; B. Schaffner (R.), 798, Apr. '49.  
 Gilles de la Tourette's Disease, Psychodynamic Considerations; E. Ascher, 267, Oct. '48.  
 Glutamic Acid, Effect of, on Mental and Physical Growth of Mongols; F. T. Zimmerman et al., 661, Mar. '49.  
 Governor Bacon Health Center (Ed.), 706, Mar. '49.

## Grants and Awards:

- Awards to Dr. Overholser and Saint Elizabeths Hospital (Ed.), 72, July '48.  
 Bernays Award for Intergroup Relations Research (Ed.), 633, Feb. '49.  
 Carnegie Corporation (Ed.), 155, Aug. '48; 552, Jan. '49; 792, Apr. '49; 875, May '49.  
 Federal Grants for Training in Psychiatry (Ed.), 708, Mar. '49.  
 Grants under National Mental Health Act (Ed.), 312, Oct. '48.  
 Hofheimer, Lester N., Research Award (Ed.), 632, Feb. '49.  
 Pi Lambda Theta Awards (Ed.), 631, Feb. '49.  
 Rockefeller Foundation Appropriations (Ed.), 631, Feb. '49.  
 Graphology: *Personality in Handwriting*; A. O. Mendel (R.), 238, Sept. '48.  
 Gregg, Alan, Quotation from (P.P.), 466, Dec. '48.  
 Gregory Lecture, 1948 (Ed.), 552, Jan. '49.  
 Group Therapy:  
   Review of Psychiatric Progress, 1948, Symp.; N. D. C. Lewis, 512, Jan. '49.  
   With Neurotics; F. Powdermaker and J. D. Frank, 449, Dec. '48.  
   With Psychotic Patients and Their Relatives; W. D. Ross, 383, Nov. '48.  
 Groves Conference on the Family (Ed.), 72, July '48.

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- Hall, James King, 1875-1948 (O.), 559, Jan. '49.  
 Hallucinations, Verbal, and Activity of Vocal Musculature; L. N. Gould, 367, Nov. '48.  
 Heredity and Genetics:  
   New Pyrrhic Victories of Academician Lysenko (Ed.), 626, Feb. '49.  
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- 400 Years of a Doctor's Life*; G. Rosen and B. Caspari-Rosen (R.), 557, Jan. '49.  
*History of Medicine*; C. C. Mettler (R.), 638, Feb. '49.  
 Medical Students and Psychiatry 50 Years Ago (Ed.), 793, Apr. '49.  
 Hofheimer, Lester N., Research Award (Ed.), 632, Feb. '49.  
 Holistic Approach in Psychiatry; A. Angyal, 178, Sept. '48.  
*Hormones and Behavior*; F. A. Beach (R.), 638, Feb. '49.  
 Hospital Architecture: Of the Psychiatric Ward; B. Merrill, 691, Mar. '49.  
*Hygiene*; F. L. Meredith (R.), 879, May '49.  
*Hypnosis*:  
 Hypnosis in Electric Shock Treatment; L. T. Maholick and J. Warkentin, 623, Feb. '49.  
*Hypnotism Today*; L. M. LeCron and J. Bordeaux (R.), 77, July '48.  
*Story of Hypnotism*; R. W. Marks (R.), 78, July '48.

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## Industrial Psychiatry:

- British Training Courses (Ed.), 73, July '48.  
 Cornell University Course (Ed.), 313, Oct. '48.  
 Industrial Psychiatric Program in a Government Setting; L. D. Ozarin and L. M. Herrick, 904, June '49.  
*Psychobiological Program of War Shipping Administration*; G. G. Killinger, ed. (R.), 636, Feb. '49.  
 Review of Psychiatric Progress, 1948, Symp.; C. C. Burlingame, 538, Jan. '49.  
 Roster of Industrial Psychiatrists (Ed.), 471, Dec. '48.  
 Institute of Living, Expanded Research at (Ed.), 395, Nov. '48.  
*Insulin*:  
 Fatalities Resulting from Treatment with Sub-shock Doses of Insulin; N. Malamud, 373, Nov. '48. *See also* Correspondence, 702, 703, Mar. '49.  
 Modified Insulin Treatment in Neuroses and Early Psychoses; W. Sargant, 821, May '49.  
 Insulin Shock Therapy: *See* Shock Therapy.  
 Intelligence: Effect of Glutamic Acid on Mental and Physical Growth of Mongols; F. T. Zimmerman et al., 661, Mar. '49.  
 International Congress on Mental Health (Ed.), 72, July '48; 232, Sept. '48; 310, Oct. '48; 554, Jan. '49.  
 Interviewing:  
 Intake Interview in Psychiatric Treatment in Children's Cases; J. V. Coleman et al., 183, Sept. '48.  
 Principles and Procedures in Insight Therapy; J. E. Finesinger, 187, Sept. '48.  
 Involutional Psychoses: Socio-Psychiatric Follow-Up Study; W. Malamud et al., 567, Feb. '49.  
 Iowa Neuro-Psychiatric Society Organized (Ed.), 632, Feb. '49.

## J

- Jesus, Psychiatric Study of*; A. Schweitzer (R.), 880, May '49.  
 Jung, Carl Gustav, Institute (Ed.), 155, Aug. '48.  
 Jungian Psychology: *Inner World of Man*; F. G. Wickes, 944, June '49.  
 Juvenile Delinquency: *See* Crime and Delinquency.

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- Kettle, Dr. Ronald H., Superintendent at Norwich (Ed.), 470, Dec. '48.  
 Knudson, Dr. A. B. C., Heads VA Rehabilitation Division (Ed.), 793, Apr. '49.

## L

- Language of Science (Ed.), 470, Dec. '48.  
 Learning Capacity in Schizophrenia; P. E. Huston and David Shakow, 881, June '49.  
 Legislation: *See also* Forensic Psychiatry.  
 Commitments in Illinois under Criminal Sexual Psychopath Law; W. H. Haines et al., 420, Dec. '48.  
 Insanity Plea in Crime: Evaluation of Colorado 1927 Law; C. A. Rymer, 594, Feb. '49.  
 Sterilization of Psychotic Patients under State Laws; C. J. Gamble, 60, July '48.  
 Voluntary Admissions Authorized at Saint Elizabeths Hospital (Ed.), 232, Sept. '48.  
 Leucotomy: *See* Psychosurgery.  
*Life Is For Living*; D. E. Cameron (R.), 800, Apr. '49.  
 Lobotomy: *See* Psychosurgery.  
 Lymphocytes in the Psychoneuroses; H. C. Shands and J. E. Finesinger, 277, Oct. '48.  
 Lysenko, New Pyrrhic Victories of Academician (Ed.), 626, Feb. '49.

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- Malononitrile in Treatment of Mental Illnesses; I. H. MacKinnon et al., 686, Mar. '49.  
*Man, Weather, Sun*; W. F. Petersen (R.), 878, May '49.  
*Medicine, Bringing Modern, to the People*; Long Island College of Medicine (R.), 715, Mar. '49.  
 Mental Deficiency (Review of Psychiatric Progress, 1948, Symp.); L. Kanner, 526, Jan. '49.  
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 Mental Hospital Institute (Ed.), 706, Mar. '49.  
 Mental Hospitals, Patient Population Distribution in U. S.; S. Liebman and R. L. French, 489, Jan. '49.  
 Mesantoin Poisoning in Treatment of Epilepsy (Ed.), 471, Dec. '48.  
 Mesantoin Therapy in Epilepsy; J. L. Fetterman and V. M. Victoroff, 410, Dec. '48.  
 Methadon, Addiction Liability of, and Use in Treatment of Morphine Abstinence Syndrome; H. Isbell and V. H. Vogel, 909, June '49.  
 Mid-Life, Normal Attitudinal and Ideological Transitions of; E. G. Billings, 615, Feb. '49.

- Military Psychiatry: *See also* Rehabilitation, VA. Atomic Energy in Medicine; J. Z. Bowers, 321, Nov. '48.
- Current Developments and Problems in Military Neuropsychiatry; J. M. Caldwell, Jr., 561, Feb. '49.
- Openings in Army Medical Service (Ed.), 471, Dec. '48.
- Plan for Screening, Induction, and Utilization of Manpower; W. Bloomberg, 462, Dec. '48.
- Problem Soldier and the Army; J. M. Caldwell, Jr., 46, July '48.
- Professional Manpower Shortage (Ed.), 941, June '49.
- Psychiatric Problems of German Occupation; E. B. Brody, 286, Oct. '48.
- Psychological Warfare*; P. M. A. Linebarger (R.), 797, Apr. '49.
- Psychoses among Psychopathic Personalities in Association with Inelastic Situations Overseas; H. S. Ripley and S. Wolf, 52, July '48.
- Review of Psychiatric Progress, 1948, Symp.; W. Overholser, 542, Jan. '49.
- Selective Service Law Violators; M. J. Pescor, 641, Mar. '49.
- Minnesota Multiphasic Personality Inventory: F Scale, Clinical Significance in Experimental Neurosis; J. Brozek and B. C. Schiele, 259, Oct. '48.
- Patterns before and after Insulin Shock Therapy; W. M. Hales and W. Simon, 254, Oct. '48.
- Mongoloid Idiocy, Early Senile Dementia in; G. A. Jervis, 102, Aug. '48.
- Mongols, Effect of Glutamic Acid on Mental and Physical Growth of; F. T. Zimmerman et al., 661, Mar. '49.
- Montreal and Quebec, Psychiatric Facilities in; E. Legrand and G. E. Reed, 782, Apr. '49.
- Moosehaven, Laboratory for Gerontology and Geriatrics (Ed.), 942, June '49.
- Morphine Addiction, Neurophysiological Basis of; A. Wikler, 329, Nov. '48.
- Mount Holyoke College Institute on United Nations (Ed.), 630, Feb. '49.
- Multiple Sclerosis (Ed.), 633, Feb. '49.
- Myanesin in Electric Shock: Studies in Rabbits and Man; W. L. Holt, Jr., et al., 834, May '49.
- Myerson, Abraham, 1881-1948 (O.), 479, Dec. '48.
- N
- Narcoanalysis and Allied Procedures; H. L. MacKinnon, 224, Sept. '48.
- National Advisory Mental Health Council (Ed.), 312, Oct. '48.
- National Mental Health Act (P.P.), 227, Sept. '48; (Ed.), 632, Feb. '49.
- Neuroanatomy; F. A. Mettler (R.), 477, Dec. '48.
- Neurology:  
*Fundamentals of Clinical Neurology*; H. H. Merritt et al. (R.), 716, Mar. '49.  
*Introduction to Clinical Neurology*; G. Holmes (R.), 315, Oct. '48.  
*Les Rapports de la Neurologie et de la Psychiatrie*; H. Ey et al. (R.), 318, Oct. '48.
- VA Residencies (Ed.), 632, Feb. '49; 941, June '49.
- Neurology, Comparative:  
*Brain of the Tiger Salamander*; C. J. Herrick (R.), 157, Aug. '48.  
*Studies on Morphogenesis of Brain in Hyracoidea, Ungulata, Carnivora, and Pinnipedia*; K. H. Krabbe (R.), 318, Oct. '48.
- Neuropathology:  
 Brain Tumors in Mental Hospital Patients; S. Levin, 897, June '49.  
 Dynamic Mechanisms Underlying Some Forms of Cerebral Dysfunction; S. Brock, 246, Oct. '48.  
 EEG in Cases with Cortical Atrophy and Ventricular Dilatation; S. Levin and M. Greenblatt, 220, Sept. '48.  
*Histopathology of Peripheral and Central Nervous System*; G. B. Hassin (R.), 943, June '49.  
 Histopathology of Schizophrenia. I. The Cortex; N. W. Winkelman and M. H. Book, 889, June '49.  
 Review of Psychiatric Progress, 1948, Symp.; O. R. Langworthy and J. C. Whitehorn, 500, Jan. '49.
- Neurophysiology, Experimental:  
 Carotid Sinus in Neuropsychiatric Cases; M. Greenblatt et al., 673, Mar. '49. *See also* Correspond., 936, 937, June '49.  
 Morphine Addiction, Neurophysiologic Basis of; A. Wikler, 329, Nov. '48.
- Neuropsychiatry, Synopsis of*; L. S. Selling (R.), 634, Feb. '49.
- Neurosyphilis, Review of Psychiatric Progress, 1948, Symp.; A. S. Rose, 517, Jan. '49.
- New Fields of Psychiatry*; D. Levy (R.), 476, Dec. '48.
- New Jersey, Psychiatric Manpower of; H. A. Davidson, 292, Oct. '48.
- Newspaper Publicity:  
 Newspaper Crusades (Ed.), 938, June '49.  
 Reactions of Children to a Highly Publicized Crime against a Child; S. S. Sloman, 779, Apr. '49.
- New York State Department of Mental Hygiene:  
 Advisory Council Appointed (Ed.), 394, Nov. '48.  
 Development of New Bread Formula (Ed.), 312, Oct. '48.  
 Occupational Therapy Program (Ed.), 153, Aug. '48.  
 Report of Commissioner (Ed.), 153, Aug. '48.
- New York University—Bellevue Medical Center (Ed.), 630, Feb. '49.
- Nosophobia, Nosophilia (Ed.), 871, May '49.
- Nursing:  
 Psychiatric Nurse in a Community Mental Health Program; P. Shalit, 377, Nov. '48.  
 Psychiatric Nursing (Review of Psychiatric Progress, 1948, Symp.); M. E. Corcoran, 534, Jan. '49.
- Nutrition in New York State Hospitals (Ed.), 312, Oct. '48.



## O

- Oberndorf, Dr. C. P., Joins Editorial Board (Ed.), 71, July '48.
- Obituaries:
- Brill, Abraham Arden (1874-1948), 79, July '48.
  - Chapman, Ross McClure (1881-1948), 718, Mar. '49.
  - Hall, James King (1875-1948), 559, Jan. '49.
  - Myerson, Abraham (1881-1948), 479, Dec. '48.
  - Orton, Samuel Torrey (1879-1948), 640, Feb. '49.
  - Paine, N. Emmons (1853-1948), 719, Mar. '49.
  - Williams, Charles Frederick (1875-1948), 240, Sept. '48.
- Observations on the Histopathology of Schizophrenia. I. The Cortex; N. W. Winkelman and M. Harold Book, 881, June '49.
- Obstetrics: *Story of Human Birth*; A. F. Guttmacher (R.), 160, Aug. '48.
- Occupational Therapy Program in N. Y. State Hospitals (Ed.), 153, Aug. '48.
- Occupational Therapy (Review of Psychiatric Progress, 1948, Symp.); L. F. Woolley and R. Chalmers, 536, Jan. '49.
- Old Age: Its Compensations and Rewards*; A. L. Vischer (R.), 478, Dec. '48.
- O'Neill, Dr. Francis J., Director of Utica State Hospital (Ed.), 874, May '49.
- Opiate Addiction*; A. R. Lindesmith (R.), 74, July '48.
- Oral Barbiturates, Use of, in Psychotherapy; L. Bellak, 849, May '49.
- Orton, Samuel Torrey, 1879-1948 (O.), 640, Feb. '49.
- Outpatient Mental Clinics and Family Care (Review of Psychiatric Progress, 1948, Symp.); H. M. Pollock, 533, Jan. '49.
- Overholser, Winfred:
- Awards to Dr. Overholser and Saint Elizabeths Hospital (Ed.), 72, July '48.
  - Biographical Sketch; M. Moore, 10, July '48.
  - Elected to National Board of Medical Examiners (Ed.), 631, Feb. '49.

## P

- Paine, N. Emmons, 1853-1948 (O.), 719, Mar. '49.
- Paranoia, Psychosexual Factors in; H. R. Klein and W. A. Horwitz, 697, Mar. '49.
- Parapsychology (Ed.), 632, Feb. '49.
- Pavlov Centenary (Ed.), 792, Apr. '49.
- Pediatrics: *Problems of Early Infancy*; M. J. E. Senn, ed. (R.), 634, Feb. '49.
- Pellagra: *La Psicosis Pelagrosa*; B. Llopis (R.), 473, Dec. '48.
- Penicillin Therapy in General Paresis; G. D. Weickhardt, 63, July '48.
- Personality in Nature, Society, Culture*; C. Kluckhohn and H. A. Murray, eds. (R.), 714, Mar. '49.
- Personnel Selection: *Assessment of Men*; OSS Assessment Staff (R.), 799, Apr. '49.
- Pervitin, Intravenous, Psychological and Physiological Effects; J. Levine et al., 429, Dec. '48.
- Physiological Treatment (Review of Psychiatric Progress, 1948, Symp.); J. Wortis, 528, Jan. '49.
- Pi Lambda Theta Awards (Ed.), 631, Feb. '49.
- Poets at Work*; R. Arnheim et al. (R.), 157, Aug. '48.
- Porteous, Dr. Carlyle, Death of (Ed.), 875, May '49.
- Postencephalitic Behavior Disorder and Parkinsonism, EEG in; S. Levin, 439, Dec. '48.
- Poverty: 1,000 Unsuccessful Careers; A. W. Stearns and A. D. Ullman, 801, May '49.
- Practical Clinical Psychiatry*; E. A. Strecker et al. (R.), 877, May '49.
- Prefrontal Lobotomy: See Psychosurgery.
- Presenile Psychosis: Report of Two Cases with Brain Biopsy Studies; P. Polatin et al., 96, Aug. '48.
- Presidential Address; W. Overholser, 1, July '48.
- Private Practice, Psychiatric, New Possibilities in; C. P. Oberndorf, 589, Feb. '49.
- Private Practice, in a Rural Community; J. Sirkin, 775, Apr. '49.
- Problem Soldier and the Army; J. M. Caldwell, Jr., 46, July '48.
- Psychiatric Education:
- Graduate Residency Training in Psychoanalytic Medicine; S. Rado, 111, Aug. '48.
  - Maryland Postgraduate Psychiatric Institute, (Ed.), 941, June '49.
  - Mental Hygiene Research Fellowships, U.S.P. H.S. (Ed.), 154, Aug. '48.
  - Metropolitan State Hospital Seminar (Ed.), 312, Oct. '48.
  - Mutual Dependency of Professional Training in Psychology and Psychiatry; J. G. Miller, 116, Aug. '48.
  - Nassau Neuropsychiatric Society Seminar (Ed.), 708, Mar. '49.
  - Review of Psychiatric Progress, 1948, Symp.; C. A. Rymer, 545, Jan. '49.
- Residencies and Training Programs (Ed.):
- Albany Hospital, 941, June '49.
  - Bellevue, Child Psychiatry, 708, Mar. '49.
  - Catholic University, Child Psychiatry, 876, May '49.
  - Chicago, University of, Psychotherapy, 232, Sept. '48.
  - Child Guidance Clinics, 794, Apr. '49.
  - Langley Porter Clinic, 874, May '49.
  - McGill University, 395, Nov. '48.
  - Menninger Foundation, 395, Nov. '48.
  - VA Residencies, 313, Oct. '48; 632, Feb. '49; 875, May '49.
- Psychiatric Personnel: Psychiatric Manpower of New Jersey; H. A. Davidson, 292, Oct. '48.
- Psychiatry: Its Evolution and Present Status*; W. C. Menninger (R.), 397, Nov. '48.
- Psychoanalysis:
- Deep Analysis: Clinical Study of an Individual Case*; C. Berg (R.), 319, Oct. '48.
  - Graduate Residency Training in Psychoanalytic Medicine; S. Rado, 111, Aug. '48.
  - New Possibilities in Private Psychiatric Practice; C. P. Oberndorf, 589, Feb. '49.
  - Psicanalise e Psiquiatria*; J. A. Garcia (R.), 238, Sept. '48.

- Psychoanalytic Contribution to Treatment of Behavior Problems in Children; S. Lorand, 357, Nov. '48.
- Psychoanalytic Theory of Neurosis*; O. Fenichel (R.), 716, Mar. '49.
- Psychobiology and Psychiatry: Textbook of Normal and Abnormal Human Behavior*; W. Muncie (R.), 239, Sept. '48.
- Psychodrama*; J. L. Moreno (R.), 235, Sept. '48.
- Psychodrama: Theatre of Spontaneity*; J. L. Moreno (R.), 237, Sept. '48.
- Psychology. *See also* Mental Deficiency, Tests.
- Animali e Uomo Visti da uno Psicologo*; G. Zunini (R.), 637, Feb. '49.
- Case Histories in Clinical and Abnormal Psychology*; A. Burton and R. E. Harris, eds. (R.), 636, Feb. '49.
- Child Psychology*; A. T. Jersild (R.), 878, May '49.
- Developmental Diagnosis*; A. Gesell and C. S. Amatruda (R.), 316, Oct. '48.
- How Our Minds Work*; C. E. M. Joad (R.), 76, July '48.
- Introduction to Clinical Psychology*; L. A. Pennington and I. A. Berg (R.), 796, Apr. '49.
- Introduzione alla Psicologia*; A. Gemelli and G. Zunini (R.), 477, Dec. '48.
- Learning Capacity in Schizophrenia; P. E. Huston and D. Shakow, 881, June '49.
- Modern Clinical Psychology*; T. W. Richards (R.), 474, Dec. '48.
- Mutual Dependency of Professional Training in Psychology and Psychiatry; J. G. Miller, 116, Aug. '48.
- Psychiatry and Psychology (P.P.), 389, Nov. '48.
- Psychiatry in Public Health (Ed.), 939, June '49.
- Psychology of Behavior Disorders: A Biosocial Interpretation*; N. Cameron (R.), 236, Sept. '48.
- Psychometric Fellowships (Ed.), 553, Jan. '49.
- Psychometrics (Review of Psychiatric Progress, 1948, Symp.); S. G. Estes, 508, Jan. '49.
- Psychopath, Characteristics of; H. Cason, 211, Sept. '48.
- Psychopathic Personalities, with Psychoses, in Inelastic Situations Overseas; H. S. Ripley and S. Wolf, 52, July '48.
- Psychosexual Factors in Paranoid Phenomena; H. R. Klein and W. A. Horwitz, 697, Mar. '49.
- Psychosocial Medicine: A Study of the Sick Society*; J. L. Halliday (R.), 397, Nov. '48.
- Psychosomatic Medicine:
- Psychiatry in the General Hospital; B. L. Keyes et al., 90, Aug. '48.
- Review of Psychiatric Progress, 1948, Symp.; N. D. C. Lewis, 512, Jan. '49.
- Psychosurgery:
- Cerebral Topectomy (Ed.), 151, Aug. '48.
- Effects of Prefrontal Lobotomy on Symptomatology of Schizophrenic Patients; D. Rothschild and A. Kaye, 752, Apr. '49.
- Evaluation of Leucotomy Results; F. Reitman, 86, Aug. '48.
- Frontal Lobotomy; J. E. Oltman et al., 742, Apr. '49.
- International Conference on Psychosurgery (Ed.), 467, Dec. '48; 550, Jan. '49.
- New Instrument for Performing Transorbital Leukotomy; M. T. Moore, 741, Apr. '49.
- Prefrontal Lobotomy; S. A. Robins (Corresp.), 387, Nov. '48. *See also* Reply; L. B. Kalinowsky and J. E. Scarff, 388, Nov. '48.
- Prefrontal Lobotomy as a Therapeutic Procedure (Ed.), 790, Apr. '49.
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- Selection of Cases for Prefrontal Lobotomy; L. B. Kalinowsky and J. E. Scarff, 81, Aug. '48. *See also* Correspondence, 387, 388, Nov. '48.
- Summary of 36 Cases of Lobotomy; J. B. Tompkins, 443, Dec. '48.
- Transorbital Lobotomy; W. Freeman, 734, Apr. '49.
- Psychotherapy:
- Brief Psychotherapy*; B. S. Frohman (R.), 943, June '49.
- Evaluation of Nondirective Psychotherapy*; G. A. Muench (R.), 75, July '48.
- Flight from Insight; A. B. Wheelis, 915, June '49.
- Research in (Ed.), 229, Sept. '48.
- Role of, in Electroshock Therapy (Ed.), 392, Nov. '48.
- Review of Psychiatric Progress, 1948, Symp.; N. D. C. Lewis, 512, Jan. '49.
- Use of Oral Barbiturates in; L. Bellak, 849, May '49.
- Public Health, Psychiatry in (Ed.), 939, June '49.
- Publications:
- Biological Abstracts (Ed.), 792, Apr. '49.
- Excerpta Medica (Ed.), 233, Sept. '48.
- Journal of EEG (Ed.), 552, Jan. '49.

## Q

- Quackery, Discriminative (Ed.), 553, Jan. '49.

## R

- Rating Scale Analysis of Clinical Effects of Lobotomy; S. L. Sands and W. Malamud, 760, Apr. '49.
- Reflexe au Psychique*; P. Cossa (R.), 556, Jan. '49.
- Regional Psychiatry: Facilities in Montreal and Quebec; E. Legrand and G. E. Reed, 782, Apr. '49.
- Rehabilitation: *See also* VA.
- Cerebral Palsy Training Program (Ed.), 633, Feb. '49.
- Exploratory Training Technique for Reeducation of Catatonics; P. E. Roland, 353, Nov. '48.
- Rehabilitation of the Patient*; C. H. Elledge (R.), 637, Feb. '49.
- Rehabilitation of Physically Handicapped*; H. H. Kessler (R.), 158, Aug. '48.

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- Vocational Rehabilitation of Epileptics in Texas; J. L. Otto, 417, Dec. '48.
- Restraint, Physical, Psychological Significance of, to Mental Patients; M. H. Erickson, 612, Feb. '49.
- Rhythmic Patterns in Childhood; R. S. Lourie, 653, Mar. '49.
- Rockefeller Foundation Appropriations (Ed.), 631, Feb. '49.
- Rogerson, Dr. Cuthbert H., Death of (Ed.), 793, Apr. '49.
- Rorschach:  
In Differential Diagnosis; R. J. Young, 381, Nov. '48.  
*Principles and Practice of Rorschach Personality Test*; W. Mons (R.), 556, Jan. '49.
- Rush, Benjamin, *Selected Writings of*; D. D. Runes, ed. (R.), 880, May '49.
- S
- Sands, Dr. Sidney L., Director of Research at Worcester (Ed.), 234, Sept. '48.
- Schizophrenia:  
Cephalin-Cholesterol Flocculation Test in Schizophrenia; F. H. Zimmerman et al., 225, Sept. '48.  
Effects of Prefrontal Lobotomy on Symptomatology of Schizophrenic Patients; D. Rothschild and A. Kaye, 752, Apr. '49.  
Exploratory Training Technique for Reeducation of Catatonics; P. E. Roland, 353, Nov. '48.  
Histopathology of Schizophrenia. I. The Cortex; N. W. Winkelman and M. H. Book, 889, June '49.  
Hospital Treatment of; D. M. Hamilton and J. H. Wall, 346, Nov. '48.  
Learning Capacity in Schizophrenia; P. E. Huston and D. Shakow, 881, June '49.  
Scrutiny, Social Anxiety, Inner Turmoil, Relationship to; A. Myerson, 401, Dec. '48.  
Spontaneous Recovery in Two Cases of Advanced Schizophrenic Organismic Stagnation; D. H. Boltz, 339, Nov. '48.
- Scrutiny, Social Anxiety, Inner Turmoil in Relationship to Schizophrenia; A. Myerson, 401, Dec. '48.
- Semantics: *See* General Semantics.
- Senn, Dr. Milton, Appointed Professor at Yale (Ed.), 395, Nov. '48.
- Sex Education: *How Life Is Handed On*; C. Bibby (R.), 475, Dec. '48.
- Sexual Psychopath Law, Criminal, in Illinois, Commitments under; W. H. Haines et al., 420, Dec. '48.
- Shock Therapy:  
1,000 Psychotic Veterans Treated with Insulin and Electric Shock; S. Paster and S. C. Holtzman, 811, May '49.  
Brief Stimulus Therapy: Physiological and Clinical Observations; W. T. Liberson, 28, July '48.  
Changes in EEG Resulting from; M. A. Kennard and M. D. Willner, 40, July '48.  
Comparative Lymphocytic and Biochemical Responses of Patients to; E. H. Parsons et al., 573, Feb. '49.
- Coramine, Combined with, in Treatment of Psychotic Excitement; H. D. Fabing, 435, Dec. '48.
- Effect of ECT on Water Metabolism in Psychotic Patients; M. D. Altschule and K. J. Tillotson, 829, May '49.
- Follow-Up Studies of Shock-Treated Patients; J. K. Morrow and J. P. King, 815, May '49.
- Hypnosis in ECT; L. T. Maholick and J. Warrentin, 623, Feb. '49.
- Influence of ECT on Blood Sugar, Leucocytes and Lymphocytes; K. Stern et al., 585, Feb. '49.
- Minnesota Multiphasic Personality Inventory Patterns before and after Insulin Shock Therapy; W. M. Hales and W. Simon, 254, Oct. '48.
- Myanesin in ECT, Studies in Rabbits and Man; W. L. Holt, Jr., et al., 834, May '49.
- Orthopedic and Neurological Follow-Up Study of Vertebral Fractures in; P. Polatin and L. Linn, 825, '49.
- Prophylactic ECT; J. J. Geoghegan and G. H. Stevenson, 494, Jan. '49.
- Review of Psychiatric Progress, 1948; Symp.; J. Wortis, 528, Jan. '49.
- Role of Psychotherapy in ECT (Ed.), 392, Nov. '48.
- Shock Treatments and Other Somatic Procedures in Psychiatry*; L. B. Kalinowsky and P. H. Hoch (R.), 159, Aug. '48.
- Sin as a Cause of Mental Illness (Ed.), 875, May '49.
- Social Psychopathology:  
Engineers of Peace (Ed.), 468, Dec. '48.  
Review of Psychiatric Progress, 1948, Symp.; B. Glueck, 541, Jan. '49.
- Social Science: *Recruitment, Selection, and Training of Social Scientists*; E. Sibley (R.), 797, Apr. '49.
- Social Work:  
Function of Social Worker in State Mental Hospital; H. B. deWitt, 298, Oct. '48.  
Psychiatric Social Work (Review of Psychiatric Progress, 1948, Symp.); T. A. C. Rennie, 537, Jan. '49.  
Psychiatric Social Worker Functioning at Intake in Community Clinic for Adults; M. J. Rockmore and M. E. Kenworthy, 196, Sept. '48.
- Societies Organized (Ed.):  
Bronx Society of Neurology and Psychiatry, 155, Aug. '48.  
Brooklyn Psychiatric Society, 792, Apr. '49.  
International Council for Mental Health of Children, 230, Sept. '48.  
Iowa Neuro-Psychiatric Society, 632, Feb. '49.  
World Federation for Mental Health, 311, Oct. '48.
- Sociology: 1,000 Unsuccessful Careers; A. W. Stearns and A. D. Ullman, 801, May '49.
- Sociometric Institute (Ed.), 471, Dec. '48.
- Sodium Amytal in Catatonic and Depressive States (Ed.), 73, July '48.
- Sodium Amytal, Therapeutic Effect of (Ed.), 234, Sept. '48.

- South Carolina State Hospital, Correction to Statistics for (Ed.), 313, Oct. '48.  
 Spanish Psychiatry during the Last Decade; G. R. Lafora, 901, June '49.  
*Spiritism*; G. H. Estabrooks (R.), 717, Mar. '49.  
 Sterilization of Psychotic Patients under State Laws; C. J. Gamble, 60, July '48.  
 Strong Memorial Hospital, Psychiatric Clinic (Ed.), 874, May '49.  
*Stubborn Wood*; E. Harvin (R.), 400, Nov. '48.  
*Suggestive Therapeutics*; H. Bernheim (R.), 800, Apr. '49.

## T

- Tarumianz, Dr. M. A., President of Delaware Medical Society (Ed.), 395, Nov. '48.  
*Telepathy and Medical Psychology*; J. Ehrenwald (R.), 398, Nov. '48.  
 Tests: *See also* Psychology, Rorschach.  
 Clinical Significance of MMPI F Scale Evaluated in Experimental Neurosis; J. Brozek and B. C. Schiele, 259, Oct. '48.  
 MMPI Patterns before and after Insulin Shock Therapy; W. M. Hales and W. Simon, 254, Oct. '48.  
 Thematic Apperception Test: Theory and Technique of Interpretation; S. S. Tomkins (R.), 157, Aug. '48.  
 Validity of Wechsler-Bellevue Scatter; G. R. Pascal and J. B. Zeaman, 840, May '49.  
 Tics: Psychodynamic Considerations in Gilles de la Tourette's Disease; E. Ascher, 267, Oct. '48.  
 Topectomy: *See* Psychosurgery.  
 Tuberculosis: *Taking the Cure*; R. G. Lovell (R.), 556, Jan. '49.  
 Tulane University, New Department of Psychiatry and Neurology (Ed.), 876, May '49.

## U

- Understandable Psychiatry*; L. E. Hinsie (R.), 799, Apr. '49.  
 Unsuccessful Careers, 1,000; A. W. Stearns and A. D. Ullman, 801, May '49.

## V

- Vertebral Fractures in Shock Therapy, Orthopedic and Neurological Follow-Up; P. Polatin and L. Linn, 825, May '49.  
 Veterans Administration: *See also* Military Psychiatry, Rehabilitation.  
 1,000 Psychotic Veterans Treated with Insulin and Electric Shock; S. Paster and S. C. Holtzman, 811, May '49.

## A

- Adams, Edward C.; Problems in Attitude Therapy in a Mental Hospital, 456, Dec. '48.  
 Adelson, Edward T., Sugar, Carl, and Wortis, S. Bernard; A Sociopsychiatric Study of Twenty-Five Young Offenders, 619, Feb. '49.  
 Aita, John A., and Reitan, Ralph M.; Psychotic Reactions in the Late Recovery Period Following Brain Injury, 161, Sept. '48.

- Industrial Psychiatric Program in a Government Setting; L. D. Ozarin and L. M. Herrick, 904, June '49.  
 Intensive Neuropsychiatric Treatment in VA Hospital; W. Bloomberg et al., 204, Sept. '48.  
 Knudson, Dr. A. B. C., Heads Rehabilitation Division (Ed.), 793, Apr. '49.  
 VA Residencies in Psychiatry and Neurology (Ed.), 313, Oct. '48; 632, Feb. '49; 875, May '49.  
 VA Treatment Results (Ed.), 630, Feb. '49.  
 Vienna, Postwar Psychiatry and Neurology in; E. Stransky, 426, Dec. '48.  
 Vienna: Verein für Psychiatrie und Neurologie (Ed.), 395, Nov. '48.  
 Vitamin B Complex Deficiency, Induced, in Psychotic Patients, Psychiatric Observations of; O. Kreisler et al., 107, Aug. '48.  
*Vocational Guidance, Encyclopedia of*; O. J. Caplan, ed. (R.), 320, Oct. '48.

## W

- War Crimes:  
*22 Cells in Nuremberg*; D. M. Kelley (R.), 159, Aug. '48.  
*Men, Mind, and Power*; D. Abrahamsen (R.), 879, May '49.  
 Narcotic Drugs and Genocide; H. J. Anslinger (Corresp.), 131, Aug. '48.  
 Nazi Disposal of Mental Patients (Ed.), 794, Apr. '49.  
*Nuremberg Diary*; G. M. Gilbert (R.), 235, Sept. '48.  
 War Crimes: Social-Psychological Aspects; L. Alexander, 170, Sept. '48.  
*War, Politics, and Insanity*; C. S. Bluemel (R.), 556, Jan. '49.  
 Wechsler-Bellevue Scatter, Validity of; G. R. Pascal and J. B. Zeaman, 840, May '49.  
 Williams, Charles Frederick, 1875-1948 (O.), 240, Sept. '48.  
 World Federation for Mental Health (Ed.), 311, Oct. '48; 789, Apr. '49.  
 World Health Organization, Mental Health Program for 1950 (Ed.), 875, May '49.  
 World Medical Association (Ed.), 470, Dec. '48.  
 Wortis, Dr. S. Bernard, Honored by Vienna Societies (Ed.), 553, Jan. '49.

## Y

- Year Book, 1947, of Neurology, Psychiatry, and Neurosurgery*; H. H. Reese et al. (R.), 478, Dec. '48.  
*Youth in Despair*; R. S. Banay (R.), 399, Nov. '48.

## AUTHOR INDEX

- Alexander, Leo; War Crimes: Their Social-Psychological Aspects, 170, Sept. '48.  
 Altschule, M. D., and Tillotson, K. J.; Effect of Electroconvulsive Therapy on Water Metabolism in Psychotic Patients, 829, May '49.  
 Anderson, R.: *See* Holt, W. L., jt. auth.  
 Angyal, Andras; The Holistic Approach in Psychiatry, 178, Sept. '48.  
 Apter, Nathaniel S., Halstead, Ward C., Eisele, C. Wesley and McCullough, Norman B.; Impaired

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Cerebral Functions in Chronic Brucellosis, 361, Nov. '48.

Ascher, Eduard; Psychodynamic Considerations in Gilles de la Tourette's Disease (Maladie des Tics), 267, Oct. '48.

Askonas, Brigitte A.: *See* Stern, Karl, jt. auth.

## B

Bateman, J. Fremont, and Dunham, H. Warren; The State Mental Hospital as a Specialized Community Experience, 445, Dec. '48.

Bellak, Leopold; The Use of Oral Barbiturates in Psychotherapy, 849, May '49.

Bender, Lauretta; Genesis of Hostility in Children, 241, Oct. '48.

Billings, Edward G.; The Clinical Importance of Some Normal Attitudinal and Ideological Transitions of Mid-Life, 615, Feb. '49.

Bloomberg, Wilfred; Plan for Screening, Induction, and Utilization of Man Power, 462, Dec. '48.

Bloomberg, Wilfred, Silverman, Samuel, Levings-ton, Anne G., and Murphy, William F.; An Intensive Neuropsychiatric Treatment Program in a Veterans Hospital, 204, Sept. '48.

Boltz, Oswald H.; A Report of Spontaneous Recovery in Two Cases of Advanced Schizophrenic Organismic Stagnation, 339, Nov. '48.

Bonner, C. A.; Mental Hospital Employees, Their Importance in Future Mental Hospital Betterment, 669, Mar. '49.

Book, M. Harold: *See* Winkelman, N. W., jt. auth.

Bookhammer, Robert S.: *See* Keyes, Baldwin L., jt. auth.

Bowers, John Z.; Atomic Energy in Medicine, 321, Nov. '48.

Bowman, Karl M.; Alcohol. Geriatrics (Review of Psychiatric Progress, 1948), 521, Jan. '49.

Bowman, Karl M., and Simon, Alexander; Studies in Electronarcosis Therapy: I. Clinical Evaluation, 15, July '48.

Brock, Samuel; Dynamic Mechanisms Underlying Some Forms of Cerebral Dysfunction, 246, Oct. '48.

Brody, Bernard S.: *See* Oltman, Jane E., jt. auth.

Brody, Eugene B.; Psychiatric Problems of the German Occupation, 286, Oct. '48.

Brozek, Josef, and Schiele, Burtrum C.; Clinical Significance of the Minnesota Multiphasic F Scale Evaluated in Experimental Neurosis, 259, Oct. '48.

Burgemeister, Bessie E.: *See* Zimmerman, Frederic T., jt. auth.

Burlingame, C. C.; Psychiatry in Industry (Review of Psychiatric Progress, 1948), 538, Jan. '49.

## C

Caldwell, John M., Jr.; The Problem Soldier and the Army, 46, July '48.

Caldwell, John M., Jr.; Current Developments and Problems in Military Neuropsychiatry, 561, Feb. '49.

Cameron, D. Ewen; Facilitation and Inhibition as Factors in Behavioral Deviations, 693, Mar. '49.

Cammer, Leonard: *See* MacKinnon, Irville H., jt. auth.

Cason, Hulsey; The Characteristics of the Psychopath, 211, Sept. '48.

Chalmers, Rives: *See* Woolley, Lawrence F., jt. auth.

Coleman, Jules V., Short, Genevieve B., and Hirschberg, J. Cotter; The Intake Interview as the Beginning of Psychiatric Treatment in Children's Cases, 183, Sept. '48.

Corcoran, Mary E.; Psychiatric Nursing (Review of Psychiatric Progress, 1948), 534, Jan. '49.

Cullen, Andrea M.: *See* Stern, Karl, jt. auth.

## D

Davidson, Henry A.; The Psychiatric Manpower of New Jersey, 292, Oct. '48.

DeJong, Russell N.; A Current Evaluation of the Anticonvulsant Drugs, 767, Apr. '49.

DeWitt, Henrietta B.; The Function of the Social Worker in the Total Treatment Program in a State Mental Hospital, 298, Oct. '48.

Diethelm, Oskar; The Evaluation of a Psychiatric Examination, 606, Feb. '49.

Dunham, H. Warren: *See* Bateman, J. Fremont, jt. auth.

## E

Eisele, C. Wesley: *See* Apter, Nathaniel S., jt. auth.

Erickson, Milton H.; Psychological Significance of Physical Restraint to Mental Patients, 612, Feb. '49.

Esser, Robert A.: *See* Haines, William H., jt. auth.

Estes, Stanley G.; Psychometrics (Review of Psychiatric Progress, 1948), 508, Jan. '49.

## F

Fabing, Howard D.; Combined Coramine-Electroshock Therapy in the Treatment of Psychotic Excitement, 435, Dec. '48.

Fetterman, John L., and Victoroff, Victor M.; Practical Aspects of Mesantoin Therapy in Epilepsy, 410, Dec. '48.

Ficarra, Bernard J.; The Mental Attitude of the Cancer Patient to His Disease, 304, Oct. '48.

Finesinger, Jacob E.; Psychiatric Interviewing: I. Some Principles and Procedures in Insight Therapy, 187, Sept. '48.

Finesinger, Jacob E.: *See* Shands, Harley C., jt. auth.

Frank, Jerome D.: *See* Powdermaker, Florence, jt. auth.

Freeman, Walter; Psychosurgery: Retrospects and Prospects Based on Twelve Years' Experience, 581, Feb. '49.

Freeman, Walter; Transorbital Lobotomy, 734, Apr. '49.

French, Robert L.: *See* Liebman, Samuel, jt. auth.

Friedman, Paul; Some Aspects of Concentration Camp Psychology, 601, Feb. '49.

Friedman, Samuel: *See* Oltman, Jane E., jt. auth.

## G

Gamble, Clarence J.; The Sterilization of Psychotic Patients under State Laws, 60, July '48.

Geoghegan, J. J., and Stevenson, G. H.; Prophylactic Electroshock, 494, Jan. '49.

- Gildea, Edwin F.: *See* Parsons, Ernest H., jt. auth.  
 Glueck, Bernard; Social Psychopathology (Review of Psychiatric Progress, 1948), 541, Jan. '49.  
 Gould, Louis N.; Verbal Hallucinations and Activity of Vocal Musculature, 367, Nov. '48.  
 Green, William F.: *See* Oltman, Jane E., jt. auth.  
 Greenblatt, Milton: *See* Holt, W. L., jt. auth.; Levin, Sidney, jt. auth.; Levine, Julius, jt. auth.  
 Greenblatt, Milton, Rinkel, Max, and Solomon, Harry C.; The Carotid Sinus in Neuropsychiatric Cases, 673, Mar. '49.

## H

- Haines, William H., Hoffman, Harry R., and Esser, Robert A.; Commitments under the Criminal Sexual Psychopath Law in the Criminal Court of Cook County, Illinois, 420, Dec. '48.  
 Hales, William M., and Simon, Werner; Minnesota Multiphasic Personality Inventory Patterns before and after Insulin Shock Therapy: A Preliminary Report, 254, Oct. '48.  
 Halstead, Ward C.: *See* Apter, Nathaniel S., jt. auth.  
 Hamilton, Donald M., and Wall, James H.; The Hospital Treatment of Dementia Præcox, 346, Nov. '48.  
 Hawley, Paul R.; Extramural Medical Care and the National Resources, 481, Jan. '49.  
 Hecker, Arthur O.: *See* McAllister, Robert M., jt. auth.  
 Herrick, Lucile M.: *See* Ozarin, Lucy D., jt. auth.  
 Hirschberg, J. Cotter: *See* Coleman, Jules V., jt. auth.  
 Hoch, Paul H.: *See* MacKinnon, Irville H., jt. auth.; Polatin, Phillip, jt. auth.  
 Hoffman, Harry R.: *See* Haines, William H., jt. auth.  
 Holt, W. L., Jr., Rinkel, M., Greenblatt, M., and Anderson, R.; Myanesin in Electric Shock: Studies in Rabbits and Man, 834, May '49.  
 Holtzman, Saul C.: *See* Paster, Samuel, jt. auth.  
 Horwitt, M. K.: *See* Kreisler, Oscar, jt. auth.  
 Horwitz, William A.: *See* Klein, Henriette R., jt. auth.; Polatin, Phillip, jt. auth.  
 Hulbert, Sidney Z.: *See* Parsons, Ernest H., jt. auth.  
 Huston, P. E., and Shakow, David; Learning Capacity in Schizophrenia, with Special Reference to the Concept of Deterioration, 881, June '49.

## I

- Isbell, Harris, and Vogel, Victor H.; The Addiction Liability of Methadon (Amidone, Dolophine, 10820) and Its Use in the Treatment of the Morphine Abstinence Syndrome, 909, June '49.

## J

- Jervis, George A.; Early Senile Dementia in Mongoloid Idiocy, 102, Aug. '48.

## K

- Kalinowsky, Lothar B., and Scarff, John E.; The Selection of Psychiatric Cases for Prefrontal Lobotomy, 81, Aug. '48.

- Kallmann, Franz J.; Heredity and Eugenics (Review of Psychiatric Progress, 1948), 497, Jan. '49.  
 Kanner, Leo; Child Psychiatry. Mental Deficiency (Review of Psychiatric Progress, 1948), 526, Jan. '49.  
 Kaplan, Albert J.: *See* Keyes, Baldwin L., jt. auth.  
 Kaye, Abraham: *See* Rothschild, David, jt. auth.  
 Kennard, Margaret A., and Willner, M. Dorrit; Significance of Changes in EEG which Result from Shock Therapy, 40, July '48.  
 Kenworthy, Marion E.; *See* Rockmore, Myron J., jt. auth.  
 Keyes, Baldwin L., Bookhammer, Robert S., and Kaplan, Albert J.; Psychiatry in the General Hospital, 90, Aug. '48.  
 Kindwall, Josef A.; Carbon-Dioxide Narcosis Therapy, 682, Mar. '49.  
 King, James P.: *See* Morrow, James K., jt. auth.  
 Klein, Henriette R., and Horwitz, William A.; psychosexual Factors in the Paranoid Phenomena, 697, Mar. '49.  
 Kreisler, Oscar, Liebert, Erich, and Horwitt, M. K.; Psychiatric Observations on Induced Vitamin B Complex Deficiency in Psychotic Patients, 107, Aug. '48.

## L

- Lafora, G. R.; Spanish Psychiatry during the Last Decade, 901, June '49.  
 Langworthy, Orthello R., and Whitehorn, John C.; Neuropathology, Endocrinology, and Biochemistry (Review of Psychiatric Progress, 1948), 500, Jan. '49.  
 Legrand, Emile, and Reed, George E.; Psychiatric Facilities in Montreal and Quebec, 782, Apr. '49.  
 Levin, Sidney; Brain Tumors in Mental Patients, 897, June '49.  
 Levin, Sidney; Electroencephalogram in Postencephalitic Behavior Disorder and Postencephalitic Parkinsonism, 439, Dec. '48.  
 Levin, Sidney, and Greenblatt, Milton; Electroencephalogram in Cases with Cortical Atrophy and Ventricular Dilatation, 220, Sept. '48.  
 Levine, Julius, Rinkel, Max, and Greenblatt, Milton; Psychological and Physiological Effects of Intravenous Pervitin, 429, Dec. '48.  
 Livingston, Anne G.: *See* Bloomberg, Wilfred, jt. auth.  
 Lewis, Nolan D. C.; General Clinical Psychiatry, Psychosomatic Medicine, Psychotherapy, Group Therapy, and Psychosurgery (Review of Psychiatric Progress, 1948), 512, Jan. '49.  
 Liberson, W. T.; Brief Stimulus Therapy: Physiological and Clinical Observations, 28, July '48.  
 Liberson, W. T.; Electroencephalography (Review of Psychiatric Progress, 1948), 503, Jan. '49.  
 Liebert, Erich: *See* Kreisler, Oscar, jt. auth.  
 Liebman, Samuel, and French, Robert L.; Patient Population Distribution in Mental Hospitals in the United States, 489, Jan. '49.  
 Linn, Louis: *See* Polatin, Phillip, jt. auth.  
 Lorand, Sandor; The Psychoanalytic Contribution to the Treatment of Behavior Problems in Children, 357, Nov. '48.  
 Lourie, Reginald S.; The Role of Rhythmic Patterns in Childhood, 653, Mar. '49.

## M

- MacKinnon, Harry L.; Narcoanalysis and Allied Procedures, 224, Sept. '48.
- MacKinnon, Irville H., Hoch, Paul H., Cammer, Leonard, and Waelsch, Heinrich B.; The Use of Malononitrile in the Treatment of Mental Illnesses, 686, Mar. '49.
- Maholick, L. T., and Warkentin, J.; Hypnosis in Electric Shock Treatment, 623, Feb. '49.
- Malamud, Irene T.; *See* Malamud, William, jt. auth.
- Malamud, N.; Fatalities Resulting from Treatment with Subshock Doses of Insulin, 373, Nov. '48.
- Malamud, William; *See* Sands, Sidney L., jt. auth.
- Malamud, William, Sands, Sidney L., Malamud, Irene T., and Powers, Philip J. P.; The Involuntary Psychoses: A Socio-Psychiatric Follow-up Study, 567, Feb. '49.
- McAllister, Robert M., and Hecker, Arthur O.; The Incidence of Allergy in Psychotic Reactions, 843, May '49.
- McCullough, Norman B.; *See* Apter, Nathaniel S., jt. auth.
- Merrill, Bruce; A Note on the Architecture of the Psychiatric Ward, 691, Mar. '49.
- Miller, James G.; The Mutual Dependency of Professional Training in Psychology and Psychiatry, 116, Aug. '48.
- Moore, Matthew T.; A New Instrument for Performing Transorbital Leukotomy, 741, Apr. '49.
- Moore, Merrill; Winfred Overholser, M. D., Sc. D., 10, July '48.
- Morrow, James K., and King, James P.; Follow-up Studies of Shock-Treated Patients, 815, May '49.
- Murphy, William F.; *See* Bloomberg, Wilfred, jt. auth.
- Myerson, Abraham; Scrutiny, Social Anxiety, and Inner Turmoil in Relationship to Schizophrenia, 401, Dec. '48.

## O

- Oberndorf, C. P.; New Possibilities in Private Psychiatric Practice, 589, Feb. '49.
- Oltman, Jane E., Brody, Bernard S., Friedman, Samuel, and Green, William F.; Frontal Lobotomy, 742, Apr. '49.
- Otto, John L.; Vocational Rehabilitation of Epileptics in Texas, 417, Dec. '48.
- Overholser, Winfred; Presidential Address, 1, July '48.
- Overholser, Winfred; Administrative, Forensic, and Military Psychiatry (Review of Psychiatric Progress, 1948), 542, Jan. '49.
- Ozarin, Lucy D., and Herrick, Lucile M.; An Industrial Psychiatric Program in a Government Setting, 904, June '49.

## P

- Parsons, Ernest H., Gildea, Edwin F., Ronzoni, Ethel, and Hulbert, Sidney Z.; Comparative Lymphocytic and Biochemical Responses of Patients with Schizophrenia and Affective Disorders to Electroshock, Insulin Shock, and Epinephrine, 573, Feb. '49.
- Pascal, Gerald R., and Zeaman, Jean B.; A Note on the Validity of the Wechsler-Bellevue Scatter, 840, May '49.

- Paster, Samuel, and Holtzman, Saul C.; A Study of 1,000 Psychotic Veterans Treated with Insulin and Electric Shock, 811, May '49.
- Pescor, M. J.; A Study of Selective Service Law Violators, 641, Mar. '49.
- Polatin, Phillip, Hoch, Paul H., Horwitz, William A., and Roizin, Leon; Presenile Psychosis: Report of Two Cases with Brain Biopsy Studies, 96, Aug. '48.
- Polatin, Phillip, and Linn, Louis; An Orthopedic and Neurological Follow-Up Study of Vertebral Fractures in Shock Therapy, 825, May '49.
- Pollock, Horatio M.; Outpatient Mental Clinics and Family Care (Review of Psychiatric Progress, 1948), 533, Jan. '49.
- Powdermaker, Florence, and Frank, Jerome D.; Group Psychotherapy with Neurotics, 449, Dec. '48.
- Powers, Philip J. P.; *See* Malamud, William, jt. auth.
- Pratt, Dallas; Public Mental Hospitals in England: A Survey, 485, Jan. '49.
- Putnam, Tracy J.; *See* Zimmerman, Frederic T., jt. auth.

## R

- Rado, Sandor; Graduate Residency Training in Psychoanalytic Medicine, 111, Aug. '48.
- Reed, George E.; *See* Legrand, Emile, jt. auth.
- Reitan, Ralph M.; *See* Aita, John A., jt. auth.
- Reitman, F.; Evaluation of Leucotomy Results, 86, Aug. '48.
- Rennie, Thomas A. C.; Psychiatric Social Work (Review of Psychiatric Progress, 1948), 537, Jan. '49.
- Rinkel, Max; *See* Greenblatt, Milton, jt. auth.
- Holt, W. L., jt. auth.; Levine, Julius, jt. auth.
- Ripley, Herbert S., and Wolf, Stewart; Psychoses Occurring among Psychopathic Personalities in Association with Inelastic Situations Overseas, 52, July '48.
- Rockmore, Myron J., and Kenworthy, Marion E.; The Psychiatric Social Worker Functioning at Intake in a Community Clinic for Adults, 196, Sept. '48.
- Roizin, Leon; *See* Polatin, Phillip, jt. auth.
- Roland, Paul E.; An Exploratory Training Technique for the Re-education of Catatonics, 353, Nov. '48.
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